2nd ASIA INTERNATIONAL MULTIDISCIPLINARY CONFERENCE AIMC 2018

THEME

1) Life Sciences (LS)
2) Social Science and Humanities (SSH)
3) Economics, Business and Management (EBM)
4) Science Technology Engineering and Mathematics (STEM)

Organised by

UTM Faculty of Management, Universiti Teknologi Malaysia | UniKL Universiti Kuala Lumpur | ASIA Academia Society & Industry Alliance

2nd ASIA INTERNATIONAL MULTIDISCIPLINARY CONFERENCE AIMC 2018

ASIA Academia Society & Industry Alliance | UTM Universiti Teknologi Malaysia, Faculty of Management | UniKL Universiti Kuala Lumpur

2nd ASIA INTERNATIONAL MULTIDISCIPLINARY CONFERENCE AIMC 2018

ABSTRACT BOOK

LIFE SCIENCES (LS)
SCIENCE TECHNOLOGY ENGINEERING AND MATHEMATICS (STEM)

TECHNOLOGY & SOCIETY: A MULTIDISCIPLINARY PATHWAY FOR SUSTAINABLE DEVELOPMENT

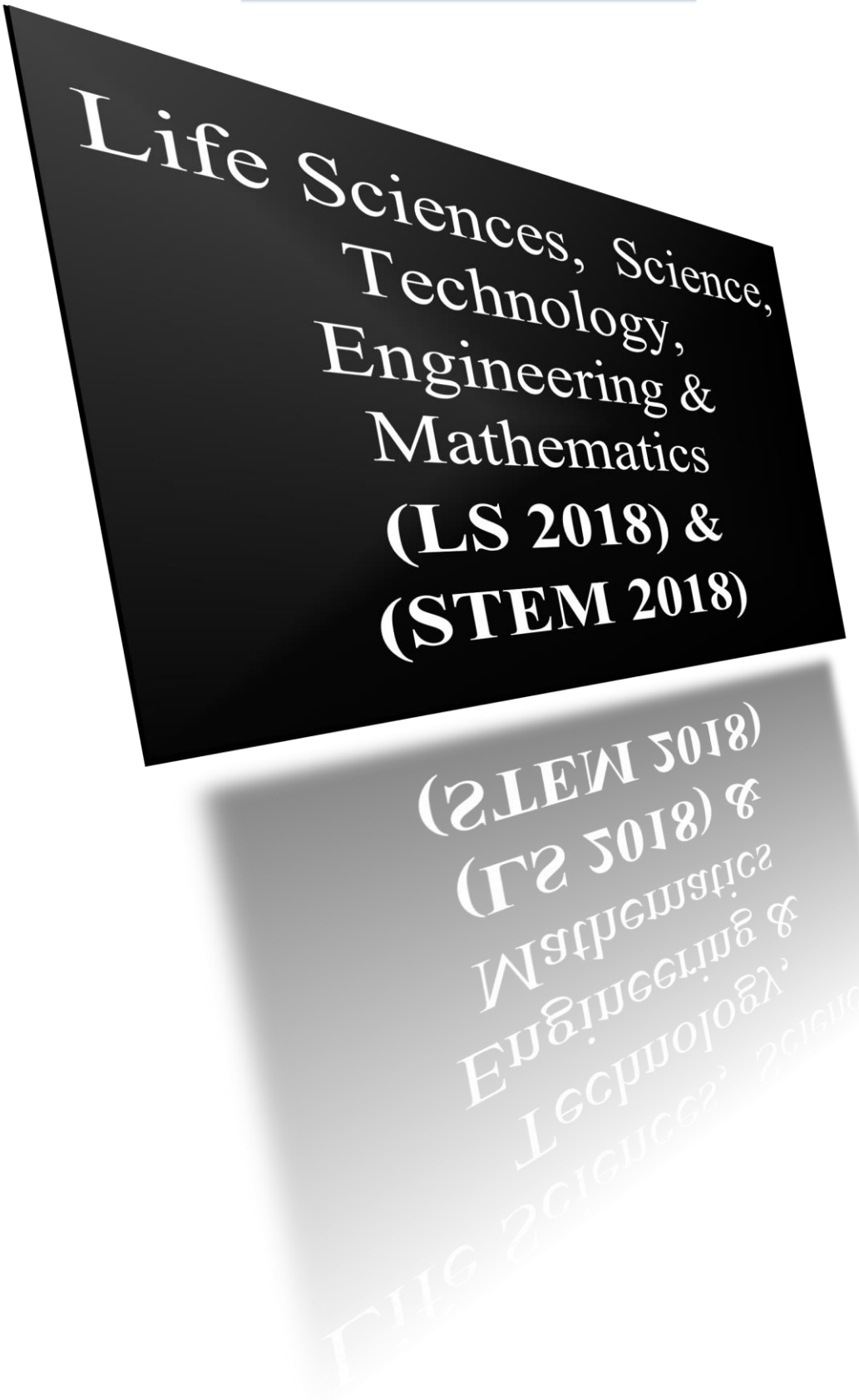
12-13 MAY 2018

FACULTY OF MANAGEMENT
UNIVERSITI TEKNOLOGI MALAYSIA JOHOR BAHRU, MALAYSIA

Emerging Sources Citation Index | 5 Slide Minute | Poster Presentation | Scopus | Springer | Elsevier

(AIMC 2018)

2nd ASIA International Multidisciplinary Conference



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Pre-Conference and Post-Conference Training Workshop

(AIMC 2018)

2nd ASIA International Multidisciplinary Conference

Conference Program

Schedule for Pre-Conference Workshop Series
2nd ASIA International Multidisciplinary Conference
(AIMC 2018)

Conference Theme: Technology and Society: a multidisciplinary pathway for sustainable development

Venue: Faculty of Management T08, Universiti Teknologi Malaysia, Kuala Lampur, Malaysia

Friday 11th May 2018

Time	Event
09:00-17:30	Conference Registration
09:00-09:30	Workshop Registration
09:30-12:30	How to write a good chapter one for your research By **Prof. Dr. Amran Rasli (UTM)**
9:30-12:30	Moderation and Mediation Analysis: Theoretical development and testing by **Assoc. Prof. Dr. Ahmad Jusoh (UTM)**
9:30-12:30	UTM thesis formatting Using Endnote By **Mr. Arslan Umar (UTM)**
13:00-14:30	**Lunch & Prayer Break**
14:30-17:00	Advanced issues in Structural Equation Modelling (SEM) using SmartPLS By **Dr. Muhammad Imran Qureshi, (Connecting Asia, UniKL)**
14:30-17:00	How to publish high impact journal papers, By **Assoc. Prof. Dr. Mamun Habib (Bangladesh)**
17:00-17:30	**Tea Break**

Schedule for 2nd ASIA International Multidisciplinary Conference (AIMC 2018)

Conference Theme: Technology and Society: a multidisciplinary pathway for sustainable development

Venue: Faculty of Management, T-08, Universiti Teknologi Malaysia, Kuala Lampur, Malaysia

Saturday 12th May 2018

Time	Event
07:30-08:45	Registration
08:45-09:00	Guests Seating
09:00-09:10	Opening Note by **Prof. Dr Amran Rasli (Universiti Teknologi Malaysia)**
09:10-09:40	Keynote Speech by **Prof. Dr Toukai Akihiro (Osaka University, Japan)**
09:40-09:55	Keynote Speech by **Assoc. Prof. Dr. Evan Lau (Universiti Malaysia Sarawak)**
09:55-10:10	Keynote Speech by **Assoc. Prof. Dr. Md. Mamun Habib (BRAC University, Bangladesh)**
10:10-10:20	Keynote Speech by **Dr. Siti Rahmah Awang, Universiti Teknologi Malaysia)**
10:20-10:30	Introduction to Connecting Asia by **Dr. Muhammad Imran Qureshi (University Kuala Lumpur)**
10:30-10:35	Group Photograph
10:35-11:00	**Breakfast**
11:00-13:00	5 Slides 5 Minutes (5S 5M) Competition
	Poster Presentation Competition
	Parallel Sessions (Normal Presentations)
13:00-14:30	**Lunch & Prayer Break**
14:30-15:30	5 Slides 5 Minutes (5S 5M) Competition
	Poster Presentation Competition
	Parallel Sessions (Normal Presentations)
15:30-15:45	**Tea Break**
15:45-17:30	5 Slides 5 Minutes (5S 5M) Competition
	Poster Presentation Competition
	Parallel Sessions (Normal Presentations)

CONFERENCE GALA DINNER

(AIMC 2018)

2nd ASIA International Multidisciplinary Conference

Venue: Pulai Spring Resort, Skudai, Johor Bahru[a]
Date: 12th May 2018
Time: 19:00 – 22:00 Hours

Time	Program
19:00 – 19:30	Registration & Guest Seating
19:30 – 19:40	Welcome Speech by Conference Chairman **Prof. Dr Amran Rasli**
19:40 – 19:50	Montage (ASIA Achievements & AIMC 2018)
19:50 – 20:00	About ASIA till Now and Future Plans of ASIA Launch of ASIA Membership Campaign by **Dr Muhammad Imran**
20:00 – 20:30	Presentation of Awards and Cash Prizes[c]
20: 30 – 21:15	Cultural Event
21: 15 – 21:20	Vote For Thanks (Dr. Muhammad Imran Qureshi)
21: 20 – 21:25	Photo Sessions
21: 25 – 22:00	Networking & Dinner
22:00	End of the Event

Dinner Theme: Connecting People Globally
Dinner Attire: Traditional Attire[b]

Tuesday, 13th May 2018

09:00-17:00	**Virtual Conference (for virtual presenters only)**

[a]20km, Jalan Pontian Lama, 81110 Pulai, Johor Malaysia
Tel : +607 521 2121, Fax : +607521 1818, Email: enquiry@pulaisprings.com

[b]**(The Guests are requested to wear their own Traditional Attire)**

[c]*Cash award will be given to only those winners of 5Slide 5Minute and poster competition who are present at Dinner ceremony*

WELCOME MESSAGE FROM CONFERENCE CHAIR

Professor Dr. Amran Rasli

We welcome all respected presenters to 2nd ASIA International Multidisciplinary Conference (AIMC 2018). As per the previous ASIA International Multidisciplinary Conference AIMC 2017, we received so many abstracts from so many researchers from many parts of the world. Since this year is the third AIC, we have decided to give back more to those who participated this year. Firstly, we have arranged for a series of value added pre- and post-conference workshops which we believe will be very beneficial to the attendees. The pre-conference workshop covers five areas which have always been the bane of most researchers, i.e. how to write a good introduction chapter to your research, moderation and mediation analysis, advanced issues in structural equation modelling using SmartPLS, how to publish in high impact factor journals and how to format thesis and article for publication.. We hope that through these workshops, the attendees will be able to improve their research and writing skills accordingly. As always, we will try to assist you as ASIA is a venue where we network and help each other as best possible.

Other than the workshops we provide travel grants for deserving participants. This is part of our corporate social responsibility on top of our financial support for deserving postgraduate students studying at UTM.

Finally, we have raised the bar by focusing on better quality articles for acceptance to be published in reputable journals. We do hope that participants would understand that publication is a long and tedious process that involves many rounds of reviews and corrections. For these reasons, we hope that participants could assist by putting in more effort to ensure that articles submitted are original, error-free and fulfil the quality standard imposed. So, help us to help you and the others as well, as a delay in submission by some individuals will affect the others as well.

We have the gala dinner which we hope all the participants would attend as this is the venue where we could chill, let our hair down and network together. And yes, we will be singing together as before!!
May 2nd ASIA International Multidisciplinary Conference (AIMC 2018) bring many benefits to all of us.

Happy conferencing.

SESSION CHAIRS AND JUDGES

Assoc Prof. Hashanah Ismail	Universiti Putra Malaysia
Assoc. Prof. Datin Dr. Hasmah Binti Zanuddin	Dept. of Media Studies, Faculty of Arts & Social Sciences, University of Malaya,
Assoc. Prof. Hasmah	Universiti Putra Malaysia
Associate Prof. Dr. Khairil wahidin Awang	Universiti Putra Malaysia
Associate Prof. Dr. Mazlina Mustapha	Universiti Putra Malaysia
Dr Muhammad bin Azmi	Universiti Kuala Lumpur, Malaysian Institute of Industrial Technology
Dr. Ani Bin Shabri	Universiti Teknologi Malaysia
Dr. Dodo Yakubu Aminu	Universiti Teknologi Malaysia
Dr. Farhana Diana Deris	Universiti Teknologi Malaysia
Dr. Helmi Adly Mohd Noor	Universiti Kuala Lumpur, Malaysian Institute of Industrial Technology
Dr. Ikrom Mirzarustamovich Rikhsiboev	Universiti Kuala Lumpur, Malaysian Institute of Industrial Technology
Dr. Inam Abbasi	Universiti Teknologi Malaysia
Dr. Kang Chia Chao	Universiti Kuala Lumpur, Malaysian Institute of Industrial Technology
Dr. Kashif Tufail Choudhary	Universiti Teknologi Malaysia
Dr. Muhammad Adil Khattak	Universiti Teknologi Malaysia
Dr. Muhammad Arshad Javed	Universiti Teknologi Malaysia
Dr. Muhammad Kamal Jaffar	Universiti Teknologi Malaysia
Dr. Muhammad Yasir	Charsadda University, Pakistan
Dr. Nurwina Akmal Binti Anuar	Universiti Teknologi Malaysia
Dr. Qais Ali	Universiti Teknologi Malaysia
Dr. Siti Sarawati Binti Hj. Johar	Department of Social Science, Centre for General Studies and Cocurricular, Universiti Tun Hussein Onn Malaysia,
Dr. Syed Zuhaib Haider Rizvi	Universiti Teknologi Malaysia
Dr. Siti Rahmah Awang	Universiti Teknologi Malaysia

GUIDE TO SESSION CHAIRS

Before Session

1. Please arrive at the meeting room 5 minutes earlier before the session starts.
2. You can check the program on the official conference website in advance.
3. If there are any changes of the session time or presenting abstract, the working staff will notify you right at the registration desk.

During Session

1. Please divide the available time equally among all presenters. Each paper should be presented in ten minutes, followed by three minutes discussion time.
2. At the beginning of the session, briefly, introduce yourself, announce of your arrangement of the presentations to the presenters and the audience. Please make sure the presenters are aware that they will receive their certificate at the end of the session.
3. We will have our working staff ready at the end of each session to take a group picture of the participants, please help to gather everyone for the photo shoot.
4. Papers with more than one author do not get any extra time for the presentation.
5. Please remind the presenters of the remaining time they have three minutes before the end of their presentation. If a speaker goes beyond the allotted time, the session chair should ask him/her to close the presentation promptly and politely.
6. Confer the certificate of participation to every presenter at the end of the session.
7. Please try to make sure the session timely proceeds since some attendees need to move from session to session.
8. If any problem which affects the continuation of your session appears, please send someone to contact the organisers.
9. If any of the presenters fail to appear at the session, please return their certificates to the organising committee.
10. Rules for 5 Slide 5 minute competition need to be strictly followed.
11. Cash award will be given to only those presenters who are present at Dinner ceremony

EDITORIAL TEAM

Editorial Board Members for 2nd ASIA International Multidisciplinary Conference (AIMC 2018)

Name	Affiliation
Prof. Dr. Ayuba A Aminu	University of Maiduguri, Borno State. Nigeria.
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Assistant Prof. Dr. Umara Noreen	College of Business Administration, Prince Sultan University, Women Campus, Riyadh, Saudi Arabia.
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Dr. Ahmad Raza Bilal	Superior University Lahore, Pakistan.
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Dr. Faisal Khan	Centre for Management and Commerce, Department of Management Sciences, University of Swabi, Pakistan.
Assistant Prof. Dr.Fatima Bint-e-Munir	Department of Physics, GC University Lahore
Dr. Goh Chin Fei	Faculty of Management, UTM, Malaysia.
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Dr. Ibrahim Danjuma	Modibbo Adama University of Technology, Nigeria.

Name	Affiliation
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Dr. Muhammad Siddique	Department of Business Administration, University of Sargodha, Pakistan.
Dr. Muhammad Tariq	Department of Economics, Abdul Wali Khan University Mardan, Pakistan.
Dr. Naveed Iqbal Ch.	Department Business Administration, University of the Punjab, Gujranwala Campus, Pakistan.
Dr. Shaghayegh Malekifar	RMIT, Vietnam.
Dr. Suresh Ramakrishnan	Faculty of Management, UTM, Malaysia.
Dr. Syed Zulfiqar Ali shah	Deputy Dean (FMS), In-charge, Accounting and Finance Department, International Islamic University, Islamabad, Pakistan.
Dr. Talal Ratyan Alanazi	King Abdulaziz Military Academy, Saudi Arabia.
Dr. Tan Owee Kowang	Faculty of Management, UTM, Malaysia.
Dr. Yulia Hendri Yeni	Andalas University, Kampus Limau Manis Padang, Indonesia.
Dr. Zeshan Ahmer	University of the Punjab, Pakistan

Team for 2nd ASIA International Multidisciplinary Conference (AIMC 2018)

Conference Chair

Professor Dr Amran Rasli

Program Director

Dr Muhammad Imran Qureshi

Committee Heads

- ✓ Mr. Aliyu Isah-Chikaji
- ✓ Dr. Muhammad Yasir
- ✓ Mr. Mansoor Nazir Bhatti
- ✓ Mr. Abdul Sami
- ✓ Mr. Arslan Umar
- ✓ Mr. Noor Ullah Khan
- ✓ Mr. Muhammad Shafiq
- ✓ Ms. Sobia Irum

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Ms. Amina Usman Saleh
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Ms. Sobia Irum
Ms. Sonia Afrin Biswas
Ms. Wang Zhe
Ms. Zainab Toyin Jagun

OUR DIGNITARIES

OUR DIGNITARIES

Toukai Akihiro is a Professor at Osaka University Japan. Director of, sustainability design on-site research center, Osaka University Japan. He is a renowned scholar with over 140 publications in highly reputable journals. His areas of expertise include; Risk Assessment, Risk Management, Environmental Management. He worked as a specially appointed professor at Environmental Engineering, Graduate School of Engineering from 2004- 2005 and at Division of Sustainable Energy and Environmental Engineering, Graduate School of Engineering from 2005-2008. Dr. Toukai is a member of several professional societies like; Japan Society for Environmental Chemistry, Japan Society of Material Cycles and Waste Management, Japan Society on Water Environment, Society of Environmental Science, Japan, The Japan Association for Social and Economic Systems Studies, Japan Society of Civil Engineers, The Society for Risk Analysis Japan, The Japanese Society for Science Policy and Research Management, Society for Risk Analysis and Center for Environmental Information Science.

Professor Dr Amran Rasli has a PhD in Society, Business & Globalisation from Roskilde University, Denmark. At the Faculty of Management, Prof. Dr Amran Rasli teaches postgraduate students, supervise doctoral students, conduct research projects and write journals for publication as per the expectation of the university. Prof. Dr Amran Rasli is still active in doctoral supervision having graduated 39 PhD scholars so far. He had been invited as a visiting professor at University of Southern Australia, University College of Engineering and Technology, Pahang, Indian Institute of Risk Management, Hyderabad, India, Hebei University, China, Kaunas Technological University, Lithuania, National Central University, Taoyuan, Taiwan, National Chen Kung University, Tainan, Taiwan and Universitas Sebelas Maret, Surabaya, Indonesia, Universitas Bung Hatta, Indonesia, Sarhad University, Pakistan, Islamia College, Pakistan and City University, Peshawar. He is currently an Adjunct Professor at Asia E-University.

Evan Lau is a well-trained Universiti Putra Malaysia graduate with vast experience and research excellence covering the areas of International Economics with numerous applications of econometrics techniques. He is the Managing Editor of International Journal of Business and Society (IJBS). He was the Deputy Dean for Research and Postgraduate, the director of Centre for Business, Economics and Finance Forecasting (BEFfore) and Visiting Scholar in Faculty of Economics in University of Cambridge. His journal articles publications are stand at 89. His excellence in research brought him towards several award winnings including 3 times recipients of Young Researcher Award in UNIMAS; 2 times recipients Excellent Service Award, numerous research medals from several Research Expo, best papers andHighest Impact Journal Paper Award (Social Science Cluster) for UNIMAS. To date, he had successfully supervised 4 Ph.D (Economics),11 Master of Science (Economics), 37 students from Corporate Master in Business Administration (CMBA) and 116 undergraduates. He also managed to examine 36 postgraduate thesis and 136 undergraduate research projects. As an active researcher, he has been awarded 27research grants from numerous sources. He were listed as Top 10% economists in Malaysia since 2008 and Top 12% in Asia since 2012 by the Research Papers in Economics (RePEc). He was cited as Top 10 Most Productive Malaysian Based Authors in Arts, Humanities and Social Sciences for the year from 2001 to 2010, published by the Malaysian Citation Centre (MCC). His profile is also made available at SCOPUS, RePEc, ResearchGate, Google Scholar and Academia where he was among the highly cited authors in UNIMAS.

Dr. Siti Rahmah Awang is a statistics lecturer at Faculty of Management, UTM. She received Bachelor's degree in Mathematics and Statistics from California State University Long Beach, Master's degree in Statistics from Sheffield University and her PhD in Applied Statistics from Universiti Teknologi MARA, Malaysia. Siti Rahmah has 25 years of academic experience, beginning in 1992 with Universiti Teknologi MARA (UiTM). She worked 9 years for UiTM and then moved to Universiti Teknologi Malaysia (UTM) in 2002. She is now the Faculty of Management Research Manager. Her recent research activities include applied statistics especially in social science research; Psychometrics, Multiple Intelligence, Employability, Leadership and Fuzzy Modelling. She has won silver and bronze medal in Industrial Art & Technology Exhibition (INATEX) for the development of Psychometrics tests for People with Epilepsy and Tahfiz School Students.

Dr. Md. Mamun Habib is an Associate Professor at BRAC Business School (BBS), BRAC University, Bangladesh. In addition, Dr. Habib is the Visiting Scientist of University of Texas – Arlington, USA. Prior to that, he was Associate Professor at Asia Graduate School of Business (AGSB) at UNITAR International University, Malaysia and the Dept. of Operations Research/Decision Sciences, Universiti Utara Malaysia (UUM), Malaysia. He accomplished his Ph.D. and M.S. with outstanding performance in Computer & Engineering Management (CEM) under the Graduate School of Business (GSB) from Assumption University, Thailand. He has 17 years' experience in the field of teaching as well as in training, workshops, consultancy and research. At present, he is supervising some Ph.D. students at locally and internationally. He is actively involved with national and international research grant projects. As a researcher, Dr. Habib published more than 100 research papers, including Conference Proceedings, Journal articles, and book chapters/books. He is the Editor-in-Chief in International Journal of Supply Chain Management (IJSCM), London, UK (SCOPUS Indexed). He serves as the Editor-in-Chief/Lead Guest Editor/Editor/Editorial Board Member/Reviewer of more than 20 journals, particularly Scopus and Thomson Reuters Indexed Journals. Also, he delivers lecture as Keynote Speaker at more than 30 international conferences. He also serves as General Chair, Program Chair, Technical Chair, Organizing Committee Member, Technical Committee Member, Track Chair, Session Chair as well as Reviewer of numerous international conferences. His core research areas are supply chain management, production & operations management, operations research, research methodology, engineering management, technology management, and educational management. Finally, Dr. Habib is an active member of different professional organizations, including IEEE (Senior Member), IEOM (President, SCM Technical Division), IETI (Senior Member and Board of Director), IRED (Fellow), GRDS (Vice-President), IEB, AIMS, INFOMS, just to name a few. He is involved with QS World University Ranking and Times Higher Education Ranking as an academician.

Muhammad Imran Qureshi is a Doctor of management from Universiti Teknologi Malaysia. His doctorate research focused on the work practices for sustainable manufacturing under Socio-technical systems context. He is currently working as a senior lecturer in Malaysian Institute of Industrial Technology (MITEC), Universiti Kuala Lumpur. He is also founding Director of Connecting ASIA research network. He has ten years of teaching experience in the field of Operations Management, Strategic Management, Project Management, Total Quality Management, Statistical Process Control, Environmental Management, Logistic and Supply Chain Management, Production Management and Operations Research, Statistics and Data Analysis. He is a professional trainer for data analysis. He has conducted several workshops on Structural Equation Modeling (SEM) using AMOS and SMART PLS, qualitative data analysis using NVIVO. On the research side, his research profile consists of more than 100 research publications in renowned journals with a cumulative impact factor above 45. He has written several impact factor publications with world renowned publishers like ELSEVIER and SPRINGER in the area of Operations Management, Environmental Management, Sustainability and Organizational Behavior. His work has been cited extensively with 15 i10 index and h index 13. He is also author of three text books.

Mazlina Mustapha, is doctor and an Associate Professor at the Department of Accounting and Finance, Faculty of Economics and Management, Universiti Putra Malaysia. She has more than 20 years of academic and industry experience. Prior to joining UPM, she served as an accountant at Sapura Industrial Bhd and auditor at Arthur Andersen & Co. She obtained her PhD from Universiti Utara Malaysia in 2010 and Master of Business Administration from Universiti Kebangsaan Malaysia in 2000. She is a member of the Malaysian Institute of Accountant and Institute of Internal Auditors Malaysia. Her areas of research interests include audit, corporate governance, management accounting and accounting education. Dr Mazlina currently heads the Department of Accounting and Finance of the Faculty of Economics and Management, UPM.

Khairil Wahidin Awang, PhD, is a Professor of Tourism at the Faculty of Hospitality, Tourism and Wellness, Universiti Malaysia Kelantan, Kota Bharu. He obtained his BSc in Geology and MA in Geography from the University of Nebraska, the U.S., and Ph.D in Tourism Geography from the University of Wales-Aberystwyth, the U.K. Professor Khairil specializes in the tourism-sustainability agenda. His research interest covers the arena of spatial and temperate tourism development, focusing on intertwined issues rooted in varies tourism subsectors, and of particular the small and medium-sized accommodation and attraction entities. These span across different forms of tourism; ecotourism, community-based tourism, green-tourism, rural tourism and of recent Islamic tourism. Khairil had been engaged on different capacities by the World Wide Fund for Nature, the Cambodian Government and local and private organization, and of recent the United Nations World Tourism Organization. Khairil had been in the past a Research Associate at the Islamic Tourism Centre, the Ministry of Tourism and Culture Malaysia, a Deputy Dean, a Head of Department and a Visiting Professor. Currently he teaches Business Research Methodology and tourism subjects besides supervising postgraduate students at the Universiti Malaysia Kelantan.

Hasmah Zanuddin, PhD University of Westminster, London, Associate Professor at the Dept. of Media Studies, Faculty of Arts & Social Sciences, University of Malaya, Kuala Lumpur, Malaysia. Her expertise is Public Relations, Media & Communication Policy & Management, Research Method, Content Studies and Audience Research. She has vast experience in research collaborations at the national and international level such as the Korean-Australian Research Center, University of New South Wales, Australia.. Her academic works were published in books, book chapters and journal articles. She stays active as the Working Committee to the Social Development Cluster of the Majlis Profesor Negara (MPN) and a member to the Working Committee for the Social Council led by the Implementation, Coordination Unit (ICU) Prime Minister's Dept. Malaysia.

Hashanah Ismail was formerly an Associate Professor in the Department of Accounting and Finance, Faculty of Economics and Management, Universiti Putra Malaysia. Hashanah formally retired at the end of 2016. However Associate Prof Hashanah is still serving UPM as a part-time lecturer for the Executive Accounting programme and Volunteer lecturer for the full time students at UPM. She is a member of MICPA having qualified as a CPA whilst working with Ernst and Young Kuala Lumpur. She has been contributing papers to the MICPA Journal as well as being the MICPA link person at UPM. AP Hashanah was in the Committee for Halatuju 1, 2 and 3 for the Undergraduate Accounting programmes in Malaysia, working jointly with MIA and MOHE. She also has worked as Project Manager for two Accounting Standards with MASB. Currently she is also a member of the British Accounting and Finance Association, The Asian Accounting Academic Association, the Malaysian Accounting Academic Association and The Mediterranean Accounting Association, Italy. Hashanah has published in areas of auditing, financial reporting and accounting education.

Dr. Hj. Rosmaini bin Tasmin is currently an Associate Professor at Faculty of Technology Management and Business, UTHM. He was the Director of University and Industry Relations Office, the Assistant Vice Chancellor Office for Industry and Community Relations, UTHM. Previously, he also served as the Deputy Director of Strategic and Quality Management Office, UTHM. He earned his PhD in corporate Knowledge Management (KM) from Multimedia University (MMU) Cyberjaya, Malaysia in 2008. He pursued Masters in Technology Management in UTM in 2001. His bachelor degree is in Computer Engineering, from the University of Texas at Arlington (UTA) in the United States of America in 1991. Dr. Tasmin has had over 10 years of industrial working experience in multinational corporations, such as Sony Video Malaysia, Sumitomo Electric (JB) and Thomson Mechatronics (USA group). In 1997, he was awarded the prestigious FUJITSU Asia-Pacific Scholarship Programme (FAPSP) Award by Fujitsu Ltd. Japan, at JAIMS in collaboration with the University of Hawaii at Manoa, Honolulu, USA. At JAIMS Honolulu, he was voted to be the recipient of Student of Choice Award 1997 and the Gold Winner of the Presidential Speech. A major part of his working, training, teaching, and research experience involves multinational corporations, manufacturing resources planning (MRP) systems ~ SAP, Oracle and Movex, lean manufacturing, strategic knowledge management, product innovation, quality management, the IoT, big data and cloud computing. His multidisciplinary research spans from cloud computing, e-learning in manufacturing environment, production and operations management, knowledge management assessments, and tacit and explicit knowledge. Dr. Tasmin has executed collaborative Sabbatical research at University of Vaasa, Finland, honouring MoU between UTHM and UVA. In 2015, his IT product development team has developed firmware for interfacing magnetic device that integrates computer with ACS smart reader for auto-capturing of data, targeting market for schools and universities. Currently, he leads a System Assurance (SA) team in national joint consulting and collaboration project, worth RM326K, between UTHM and Sapura Sdn. Bhd. for the MRT2.


Call for Paper
4th ASIA International Conference 2018
(AIC-2018)
ASIA
ACADEMIA SOCIETY & INDUSTRY ALLIANCE
UTM
UNIVERSITI TEKNOLOGI MALAYSIA
Tentative Dates: 15-16 December 2018
Tentative Venue: UTM, Kuala Lumpur, Malaysia
All accepted articles will be published in Scopus indexed journals
Scopus
For further information please visit: http://connectingasia.org/
Our Facebook page: https://www.facebook.com/infoconnectingasia/


Call for Paper
3rd ASIA
International Multidisciplinary Conference 2019
(AIMC-2019)
ASIA
ACADEMIA SOCIETY & INDUSTRY ALLIANCE
UTM
UNIVERSITI TEKNOLOGI MALAYSIA
Tentative Dates: 4-5 May 2019
Tentative Venue: UTM, Johor Bahru, Malaysia
All accepted articles will be published in Scopus indexed journals
Scopus
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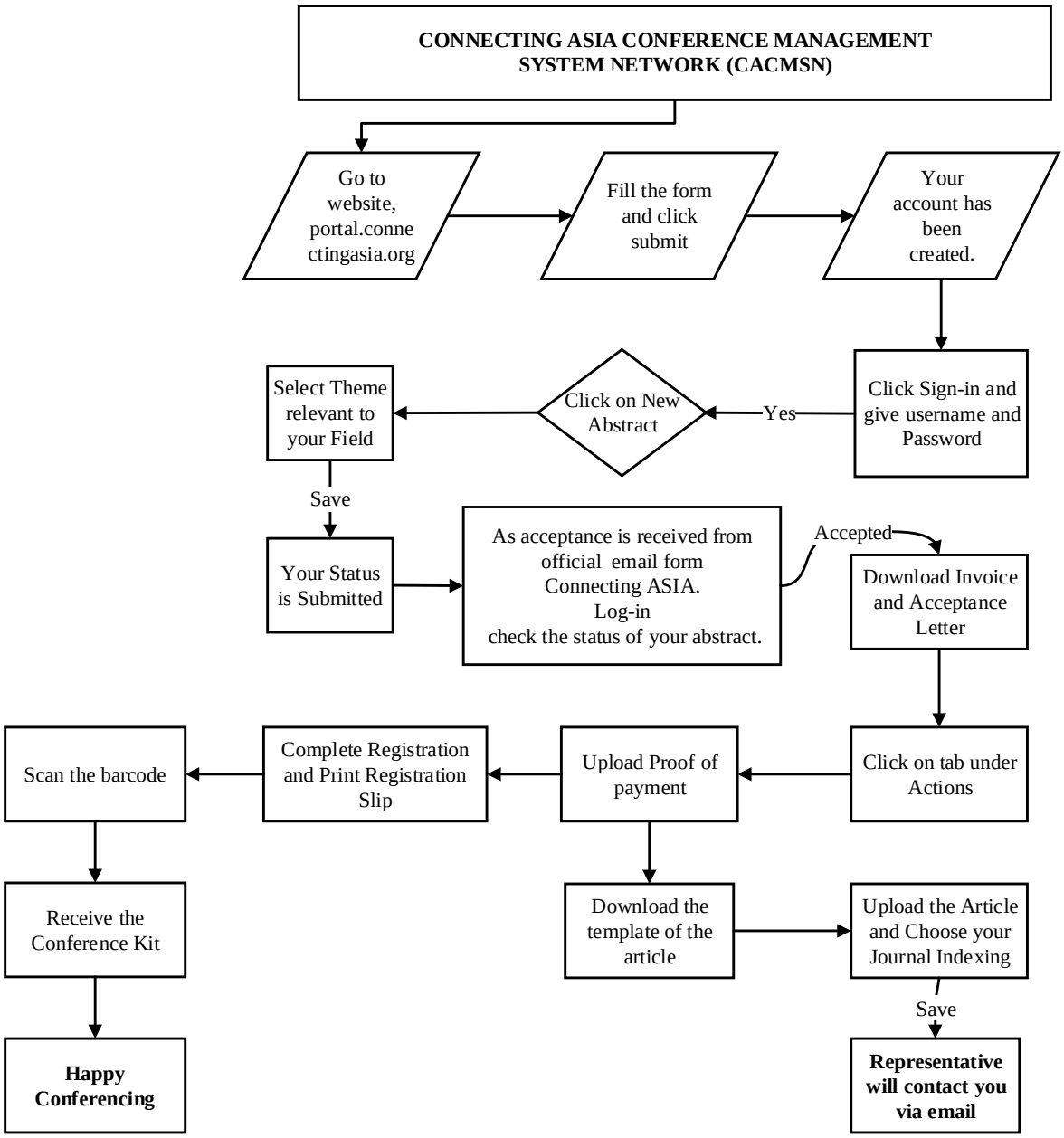
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PREVIOUS ACHIEVEMENTS

Event	Nature of Sponsorship	Participants for Award
2nd ASIA International Multidisciplinary Conference AIC 2018	Travel awards worth RM 30,000	30
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1st ASIA International Multidisciplinary Conference AIMC 2017	Publications Sponsorship RM 30,000	30
2nd ASIA International Conference AIC 2016	Travel awards worth RM 30,000	15
1st ASIA International Conference AIC 2015	Travel awards worth RM 15,000	15

Event	Nature of Publications	Number of Publications
1st ASIA International Conference AIC 2015	Scopus	30
2nd ASIA International Conference AIC 2016	HEC Recognized Journals and Scopus Journals	350
1st ASIA International Multidisciplinary Conference AIMC 2018	Scopus Journals and ISI Index Journals	Under Review 350
3rd ASIA International Conference 2017	HEC Recognized Journals and Scopus Journals	320

Workshops/Training	Year	No of Workshops	Total No. of Participants
How to write Chapter 1	2017	1	41
Smart PLS	2018	9	178
How to write Chapter 1	2017	1	35
How to do Publications	2017	2	44
Smart PLS	2017	7	128
AMOS	2016	5	96

List of Abstracts

Life Sciences (LS 2018)
and
Science, Technology, Engineering & Mathematics (STEM 2018)

2nd ASIA International Multidisciplinary Conference (AIMC 2018)

AIMC-2018-LS-10

INDOOR AIR QUALITY AND SICK BUILDING SYNDROME AMONG NIGERIAN LABORATORY UNIVERSITY WORKERS

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Abstract

Indoor air quality implies to the air quality in and around laboratory buildings and facilities as it communicates to the health and comfort of the workers. Indoor air pollution poses numerous health challenges to the laboratory workers and environment and influenced sick building syndrome (SBS) among workers. The objective of this study was to determine associations of SBS related to indoor air concentration in a dose-dependent manner among Nigerian laboratory university workers. This was a cross-sectional study on a population-based sample of Nigerian university laboratories and the workers. Data were collected using indoor air quality control meter, dosimeter tubes gases of interest, and a set of questionnaires (MM-40). The results showed the mean indoor air concentration in a dose-dependent manner of chemical parameters ranges from 473.0 to753 ppm, 473.0 to753ppm, 17.9 to 27.3 ppm, 5.7 to 8.5 ppm, and 6.3 to 9.1 ppm of CO2, CO, NO2, H2S, and SO2 respectively. The prevalence of SBS; skin-related (SRS) 38.5%, general-related symptom (GRS) 28.3%, mucosal-related symptom (MRS) 19.2%, and at least one score was a respiratory-related symptom (RRS) 13.9%. The significant associated factors of SBS revealed by multinomial logistic regression in this study were NO2 [SRS (p=0.022), GRS (p=0.023), MRS (p=0.032)], H2S [SRS (p=0.031), GRS (P<0.001), MRS (p=0.021)], SO2 [SRS (p=0.001), GRS (P<0.001), MRS (p=0.022)]. On the other hand, office laboratory temperature and relative humidity were shown to be negatively statistically associated with prevalence symptoms relative to RRS. As the conclusion, SBS found in this study is high. Measured indoor air concentration in a dose-dependent manner, environmental parameters could increase the prevalence and incidence of SBS-related symptoms; therefore it is important to educate the workers on occupational and environmental health at the workplace to minimize the SBS in the future.

AIMC-2018-LS-78

PHYLOGENY, PROTEIN STRUCTURE PREDICTION AND INSIGHTS INTO GROWTH DIFFERENTIATION FACTOR 11 OF ORYCTOLAGUS CUNICULUS

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Abstract

Growth differentiation factor 11 (GDF11) is a member of the transforming growth factor-β (TGF-β) family and acts as a regulator for the aging of multiple tissues. Other members of TGF-β family play important roles in various cellular signaling processes such as growth differentiation factor 8 (GDF8) inhibits muscle differentiation that is well understood. The mature forms of human GDF11 and GDF8 show more than 90% identity but the role of GDF11 is not well understood. To elucidate the evolutionary relationships of Oryctolagus cuniculus (rabbit) GDF11 with homologues from other closely related organisms, a comprehensive phylogenetic analysis was performed. Although a very high identity (~92%) was found between nucleotide sequences of human and rabbit GDF11, both the sequences clustered in their respective suborders. To investigate whether the small divergences in amino acid residues follow different signaling pathways of both the GDFs, 3D structures of rabbit GDF11, GDF8, inhibin, BMP7 and BMP2 were predicted and superimposed with GDF11. The superimposition of GDF11 with GDF8 revealed that a number of differences in amino acid residues of both ligands might be critical for their functions. Overall, 88.07% identity was observed between GDF11 and GDF8 with RMSD of 0.855 Å whereas, very low identities were observed between GDF11 and other ligands of TGF-β family. The comparisons of GDF11 with other ligands of TGF-β family especially GDF8 presented in this study will surely help understand the differential signaling of these similar proteins in future.

Keywords: TGF; GDF11; GDF8; phylogeny; homology modeling; prehelix loop

AIMC-2018-LS-113

FIRST CHARACTERIZATION OF IMMUNOGENIC CONJUGATES OF VI NEGATIVE SALMONELLA TYPHI O-SPECIFIC POLYSACCHARIDES WITH REPA PROTEIN FOR VACCINE DEVELOPMENT

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Abasyn Univserity

Abstract

Efficacious typhoid vaccines for young children will significantly reduce the disease burden in developing world. The Vi polysaccharide based conjugate vaccines (Vi-rEPA) against Salmonella Typhi Vi positive strains has shown high efficacy but may be ineffective against Vi negative S. Typhi. In this study, for the first time, we report the synthesis and evaluation of polysaccharide-protein conjugates of Vi negative S. Typhi as potential vaccine candidates. Four different conjugates were synthesized using recombinant exoprotein A of Pseudomonas aeruginosa (rEPA) and human serum albumin (HSA) as the carrier proteins, using either direct reductive amination or an intermediate linker molecule,

adipic acid dihydrazide (ADH). Upon injection into mice, a significantly higher antibody titer was observed in mice administrated with conjugate-1 (OSP-HSA) (P = 0.0001) and conjugate 2 (OSP-rEPA) (P ≤ 0.0001) as compared to OSP alone. In contrast, the antibody titer elicited by conjugate 3 (OSPADH-HSA) and conjugate 4 (OSPADH-rEPA) were insignificant (P = 0.1684 and P = 0.3794, respectively). We conclude that reductive amination is the superior method to prepare the S. Typhi OSP glycoconjugate. Moreover, rEPA was a better carrier protein than HSA. Thus OSP-rEPA conjugate seems to be efficacious typhoid vaccines candidate, it may be evaluated further and recommended for the clinical trials.

Keywords: Conjugate vaccines; Immunogenicity; rEPA; Salmonella Typhi Vi negative; Typhoid

AIMC-2018-LS-122

MOLECULAR MECHANISMS ASSOCIATED WITH CARBOHYDRATE AND LIPID METABOLISM AND PROGNOSIS OF DEGENERATIVE DISEASES IN RURAL AND URBAN POPULATIONS OF FAISALABAD DISTRICT

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Co-Authors: Zehra Niazi, Mutayyaba Majeed, Fizzah Mukhtar and Anwar Kamal
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Abstract

The rural and urban areas of Faisalabad District of Punjab province is inhabited with diverse ethnic populations constituting distinct genetic identity. The life style, traditions and dietary habits among these populations are varied. The physiological parameters of two diverse ethnic populations, their comparative adaptations in carbohydrate and lipid metabolism have been investigated in the present study. One hundred subjects of rural and urban populations, apparently healthy volunteers, were sampled inhabiting three villages and urban areas of Faisalabad. The adult age groups of both genders in studied populations were sampled randomly. General characteristics of the populations according to their nutritional habits including, age, weight, height, body mass index (BMI), systolic blood pressure, diastolic blood pressure, total serum cholesterol, low density lipoprotein (LDL), high density lipoprotein (HDL), triglycerides (TG) and glycemia were measured. The characteristics of age, weight, height, BMI, systolic and diastolic blood pressures, LDL cholesterol did not exhibit significant differences between both populations. Total serum cholesterol and triglycerides were significantly greater in Rural population compared to Urban population (P

Keywords: Glycemia; lipoproteins; cholesterol; blood pressure

AIMC-2018-LS-124

AUTOANTIBODY SCREENING IN SERA OF PATIENTS WITH HEPATOCELLULAR CARCINOMA AND CHOLANGIOCARCINOMA BY A SEROLOGICAL PROTEOMIC APPROACH

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Abstract

Hepatocellular carcinoma (HCC) and cholangiocarcinoma (CC) represent the two major tumors of the liver. HCC is one of the leading causes of cancer death worldwide. HCC accounts for 80% to 90% of all liver cancers. CC is a primary hepatic malignancy originating from the bile duct epithelium. It accounts for 3% of all gastrointestinal cancers in the world.The majority of people with HCC die within one year after its detection. This high fatality rate can in part be attributed to lack of diagnostic methods that allow early detection. Although alfafoetoprotein is the most effective serological marker available to detect HCC. Other secondary markers like degamma-carboxy prothrombin, glypican-3 and Golgi protein 73 also lack specificity and sensitivity. Therefore, there is a need for the discovery of more sensitive and specific markers that supplement AFP in the early detection of this cancer.Established serum markers associated with cholangiocarcinoma include carbohydrate antigen 19-9 and CEA, however these markers are not always helpful, with sensitivities approximately 70% and 50%, respectively. Consequently there is a need for new markers of the disease.Aim of the present was to screen and predict the autoantibodies which can be used as biomarkers to diagnose these two primary hepatic cancers at the early stage.Serum samples from 9 CC, 10 HCC patients, prior to any cancer treatment, and from 5 healthy volunteers were used in the study. CCSW1, CCLP1, HuH7 and HepG2 cell lines were used as antigentic extract. Proteins were separated by 2D gel electrophoresis and detected by western blotting analysis.Number of immunoreactive protein spots (with different molecular weights and iso-electric points) were stained, 5 common immunoreactive protein spots stained by all HCC patients sera by using HuH7 cell line, whereas 3 common spots were stained by 5/10 HCC sera by HepG2 cell line. By using CCSW1 cell line, 4 common immunoractive protein spots were stained by CC sera while no common immunoreactive spot was detected using CCLP1 cell line.

AIMC-2018-LS-150

COMMUNITY PERSPECTIVE ON ENERGY DEMAND: A CASE STUDY SHARAVATHI WILDLIFE SANCTUARIES, KARNATAKA, INDIA.

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Co-Authors: Vinayaka KS
The University Trans-Disciplinary Health Sciences and Technology (TDU)

Abstract

Energy is a limiting commodity for many parts of the developing world and the rural communities are highly dependent upon firewood as their primary energy source. Firewood is routinely used as the major source of energy in the majority

of households throughout India. Until now, most firewood has been collected in natural woodland habitats, even though forest schemes have been initiated to provide alternative firewood sources. This study comprehensive understanding around the community need and purpose of firewood utilization. The objectives of the study is to identify the fuelwood dependency of those communities who are benefited from the eco-developmental schemes after its implementation. More specific question is to identify firewood needs across the beneficiary household based on their energy demands and how does firewood species choice and to identify those species life-history traits in the context of ecological restoration to sustain the species for conservational statergies. The data was collected 206 households through semi-structured interviews and estimated indirectly by quantifying the woodlots and field observations. The preliminary results shown that 100 % respondents expressed usage of fuelwood for boiling the water for bathe on daily basis and followed by cooking (38%), and their livestock’s fodder (34%). The major firewood species are late-successional (girth size >30 cm GBH) used for areca-nut process (19%). Overall our empirical evidences shown that landholders demand more energy than the landless farmers. The major proportion of fuelwood used for areca process, which is one of the major economic crop for landholders. Our preliminary results shown that there is urgency in ecological restoration around the sanctuary to sustain those species which are commonly used for firewood and also provide fuel efficient furnace technologies to minimize usage of firewood from natural forest.
Keywords: Firewood, woodlot, eco-development, ecological restoration, Western Ghats, India.

AIMC-2018-LS-153

INCIDENCE OF INFECTIOUS BRONCHITIS DISEASE IN COMMMERCIAL BROILER BIRDS OF HYDERABAD DISTRICT , SINDH, PAKISTAN

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Co-Authors: nil
shah latif university khairpur pakistan

Abstract

The present study was conducted to study the incidence of infectious bronchitis disease in commercial broiler birds in five talukas i.e Hydearbad, Hala, matyari, T. M Khan and Tando Allahyar, of Hyderabad district. Total Number 979 of birds was found affected in all talukas out of which 756 (77.22%) was died and 223 (22.77%) was survieved from IBV in all five talukas of Hyderabad district . The data was collected randomly by personal survey of five talukas of Hyderabad District. The samples were brought at poultry disease diagnosed laboratory Hyderabad for confirmation of diseases.The disease was diagnosis on the sign and symptoms and postmortem was conduct for the confirmation of the disease. The present result shows that the IBV was remarkably higher no. of affected (21.66±1.36) in Hyderabad among all talukas while highest mortality rate was observed in Hyderabad (16.75 ±1.30 with 22.69%) and lowest at talukas Hala (10.66±0.94 with 23.355%) and high no. of birds survived in taluka Hyderabad (4.91±0.55 with 22.69%) among in all talukas of Hyderabad district. It may be concluded from this study that the prevelance of disease is possiably be controll by hygenic measurment, bio security and also Vaccination is the principal method of control.

Keywords: Postmortem, vaccination, Diagnosis, Infectipous, Disease

AIMC-2018-LS-189

A NEW RECORD OF MIRACIIDAE (COPEPODA: HARPACTICOIDA) FROM TIOMAN WATERS

Corresponding Author: azrina sham
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Abstract

A series of meiobenthic sampling were carried in Tioman Island between July to September 2016 and from August until October 2017. Three species from three different genera were identified as members of Miraciidae Dana, 1846 : Robertgurneya smithi Hamond, 1973, Typhlamphiascus typhloides SARS G.O, 1911 and Delavalia clavus Wells & Rao, 1987. Miraciidae are known as cosmopolitan family as they dominated all sediment layers and can be distinguished from other family due to the presence of duality ovisac, a rare feature met within harpacticoid. Presence of spinules on the anterior surface of P1 exopod and endopod and P4 exopod of Delavalia clavus showed the morphological adaptations of harpacticoid at different habitat. As comparison from published marine harpacticoid record, Robertgurneya smithi and Typhlamphiascus typhloides are newly recorded from Malaysian waters.

Keywords: benthic harpacticoids, corals, South China Sea

AIMC-2018-LS-206

SCREENING OF EARLY DIAGNOSTIC BIOMARKERS IN SERA OF PATIENTS WITH CHOLANGIOCARCINOMA BY A SERPA TECHNIQUE

Corresponding Author: Muhammad Masood Tariq Kiani
Co-Authors: Asadullah
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Abstract

Cholangiocarcinoma (CC) is a primary hepatic malignancy originating from the bile duct epithelium. It accounts for 3% of all gastrointestinal cancers in the world and its incidence has increased within the last 3 decades. The cause of most bile duct cancers is unknown. CC remains a diagnostic and therapeutic challenge. In the present, diagnosis of CC is based on clinical findings with radiological investigations, biochemical measurements, and endoscopic brushing.

Established serum markers associated with cholangiocarcinoma include carbohydrate antigen 19-9 and CEA, however these markers are not always helpful, with sensitivities approximately 70% and 50%, respectively. Consequently there is a need for new markers of the disease. Serum samples were obtained from 9 patients with CC prior to any cancer treatment, and sera from 5 healthy volunteers were used as controls. The European Cell Culture Line provided the two human cholangiocarcinoma cell lines (CCSW1 and CCLP1). SERPA technique was applied according to the standard protocol. Many protein spots are detected in 2-D maps after staining of gels, with a mean number of 130-160 spots with CCLP1 and 100-120 with CCSW1. Most of them are distributed between pH 5 and 8 and their molecular weight range was between 20 and 90 kDa. By comparative blotting analysis, four common immunoreactive spots were found in CCSW1 blots with and two out of nine CC patient. The presence of tumour derived autoantibodies in sera of CC patients includes some of the earliest TDAs, such as anti-p53, as well as new members such as anti-telomerase. A common feature of these HCC-TDAs is their low sensitivity; they are detected in approximately one fifth of cases and are typically absent in healthy subjects. On the other hand, the cancer specificity approaches 90%, a feature that compares favorably with conventional markers such as AFP and DCP.
Keywords: Biomarkers; SERPA; cholangiocarcinoma

AIMC-2018-LS-208

FORMULATION DEVELOPMENT AND EVALUATION OF PRESS COATED PULSATILE RELEASE FORMULATION OF ACECLOFENAC AND SERRATIOPEPTIDASE

Corresponding Author: Dr. Vipulkumar Patel
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Abstract

The purpose of this study was to formulate and evaluate press coated tablets of Aceclofenac and serratiopeptidase using different polymers such as ethyl cellulose and hydroxyl Propyl Cellulose as coating materials. This formulation is intended for treatment of early morning stiffness and symptomatic relief from pain in patients with various inflammatory disorders with a distinct predetermined lag time. The core tablet was prepared by direct compression technique. The core tablet was then coated using different proportions of ethyl cellulose and hydroxyl Propyl Cellulose. A two-factor three level, full factorial design will use in present investigation. The ratio of amount of ethyl cellulose and amount of L- Hydroxylpropyl cellulose in outer coat (X1) were taken as independent factor in the present study. Four factors were selected as dependent variable in this study. Percentage of drugs released in 300 minutes (Y1 and Y2) for both drugs and percentage of drugs released in 330 minutes (Y3 and Y4) were take as dependent variable. Compatibility of drugs with polymers was assured by DSC study. Results of this study indicated that the combinations of ethyl cellulose with hydroxyl Propyl Cellulose are suitable to optimize pulsatile drug release formulation of aceclofenac and serratiopeptidase. The formulation involved press coating of a rupturable coat around a rapidly disintegrating core tablet of aceclofenac.

Keywords: Chronotherapy, Pulsatile formulation, Aceclofenac, Serratiopeptidas, press coated tablets

AIMC-2018-LS-217

SOCIO ECONOMIC PERSPECTIVE OF MEDICATION COMPLIANCE AMONG PATIENTS OF MAJOR CHRONIC DISORDERS

Corresponding Author: Humera Sarwar
Co-Authors: Abdullah Dayo; Muhammad Ali Ghoto
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Abstract

The aim of the study was to find the socio-economic factors associated with non-compliance of medications. The management of chronic diseases is undoubtedly associated with medication compliance. Whereas, the noncompliance can lead to severe adverse effects on patients health. The reasons for noncompliance in majority of the conditions are polypharmacy, dosage regimen, administration inconvenience, socio economic effects and social beliefs. Quantitative descriptive correlational study was conducted by stratified sampling method in 3 different hospitals of Hyderabad city. Data was collected by questionnaire and analysis was done on SPSS 20.48.5% (n=159) were Male respondents and 51.5% (n=169) were Female respondents. The response rate of the study subjects was 100 %. N=140 were suffering from Diabetes Mellitus II, n=138 were having hypertension and n=50 were asthmatics. 31.7% of respondents had monthly income PKR

Keywords: Compliance, Socio-economic, Knowledge

AIMC-2018-LS-229

VARIATION IN SOME STRUCTURAL, BIOCHEMICAL AND GAS EXCHANGE CHARACTERISTICS OF SUN AND SHADE LEAVES OF VERNONIA AMYGDALINA

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Co-Authors: Alona Cuevas Linatoc; Aisha Muhammad Aliyu; Surayya Mustapha Muhammad
Dept of Tech and Natural resources

Abstract

Light intensity has an influence on the photosynthetic capacity of a plant. The objective of this research was to investigate the variation in some structural, biochemical and gas exchange characteristics of sun and shade leaves of Vernonia amygdalina. Sun and shade leaves were studied, and their light response parameters including light

saturation point (LSP), light compensation point (LCP) and apparent quantum yield were estimated. Photosynthetic pigment were quantified spectrophotometrically. The stomatal density was determined using the nail polish method, and examined using light microscope. The result of this study proves that high light intensity influence gas exchange, stomatal density, leaf thickness and photosynthetic pigment of the studied plant. As the light intensity increases, Amax, LSP and LCP increases. There are significant differences between the light response characteristics, photosynthetic pigment and stomatal density of sun and shade leaves (P

Keywords: gas exchange, sun leaves, light response characteristics, shade leaves, stomatal density, Vernonia amygdalina

AIMC-2018-LS-296

UTILIZATION OF RHIZOBACTERIA AND SPENT MUSHROOM COMPOST FOR THE MANAGEMENT OF BACTERIAL WILT OF POTATO

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Co-Authors: Adeela Altaf, Muhammad Inam-ul-Haq, Sajjad Hyder
PMAS-Arid Agriculture University Rawalpindi

Abstract

Potato (Solanum tuberosum L.) is fourth most important staple food in the world after wheat (Triticum aestivum L.), rice (Oryza sativa L.) and maize (Zea mays L.). In Pakistan, potato crop is cultivated over an area of 159.4 thousand hectares with 3491.7 thousand tons production. Ralstonia solanacearum causing bacterial wilt is a major threat to potato production. Management through biocontrol agents is one of the best methods that can replace synthetic chemical based formulations. In current study combine effect of antagonist rhizobacteria as biocontrol agent and spent mushroom compost as biofertilizer were tested against bacterial wilt disease pathogen. Potato plant samples infected with R. solanacearum and rhizobacteria were collected from potato growing fields in Rawalpindi. Out of twenty tested antagonistic rhizobacterial isolates, only three viz., Rh10, Rh12 and Rh 15 showed maximum inhibitory effect against R. solanacearum. In another experiment different combinations of treatments containing rhizobacteria alone or combined with fresh and spent mushroom composts were also tested against the bacterial wilt pathogen under laboratory conditions. Combination of rhizobacteria along with weathered compost (T5) reduced the disease incidence to 15.92% when compared against 77.81% in control after six weeks. Significant increase in plant height up to 41.83cm was also observed as compared to control viz., 35.5cm. Similarly, T2 (only fresh compost), T3 (containing fresh compost along with rhizobacteria) and T4 (rhizobacteria along with weathered compost) also showed better results as compared to against control (T0) where there was no application of rhizobacteria and compost. Application of rhizobacterial along with spent mushroom compost can significantly reduce the disease incidence along with the improvement in plant growth parameters.

Keywords: Potato; Spent Mushroom Compost; Bio-Control

AIMC-2018-LS-386

IN VITRO CYTOTOXICITY STUDY OF OCIMUM BASILICUM (SWEET BASIL) LEAVES AND FLOWERS METHANOLIC EXTRACTS AGAINST HT29 CELL LINE

Corresponding Author: Wan Nor Syafiqah Mohd Apandi
Co-Authors: Jamuna Thurai Singam, Naziz Nashriq Nijar, Muhamad Afiq Faisal Yahaya
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Abstract

Colon cancer remains the second most incidence cancer being reported around the world. There are a number of currently available treatments being offered to the patients to treat the disease, namely, surgery, radiation therapy and chemotherapy. Nevertheless, these treatments may have resulted in the relapsing of the disease due to the resistant property that the cancer cells possess. Thus, there is a need for researchers to find the alternative treatment in order to overcome such problem. One of the approaches to find the alternative treatment is by screening the potential anticancer compound that a medicinal plant might hold. The present study aims to investigate the cytotoxicity effect of Ocimum basilicum (O. basilicum) leaves and flowers methanolic extracts on human colon cancer cell line (HT29 cell line). Total phenolic content (TPC) for both leaves and flowers extracts was determined to quantify the amount of phenolic compound that both extracts have. Next, MTT (3-4-5-dimethylthiazol-2-yl-2,5-diphenyltetrazoliumbromide) assay was performed to determine the extracts’ inhibitory concentration that kills 50% of HT29 cell line (IC50). The results from this study showed that both extracts possess cytotoxicity effect upon exposure to HT29 cell culture. However, the leaves extract of O. basilicum is more potent in regressing the growth of HT29 cell culture compared to the flowers extract of O. basilicum at the dose of 43.99 mg/mL and 165.9 mg/mL, respectively. The present study suggests that O. basilicum leaves and flowers extracts can be further explored to find their potential ability as anticancer agent against human colon cancer disease.

Keywords: Ocimum basilicum, sweet basil, colon cancer, cytotoxicity, methanolic extract

AIMC-2018-LS-404

GROWTH OF ZINGIBER ZERUMBET AS AFFECTED BY DIFFERENT ORGANIC FERTILIZER

Corresponding Author: Nurhidah Munawer
Co-Authors: Rozilawati Shahari
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Abstract

Zingiber zerumbet (L.) Smith or lempoyang has various application especially in pharmacological field. This study investigated effects of different organic fertilizers and harvesting times on growth of lempoyang grown at Pahang Matriculation College. The 9 treatment combinations were arranged in a randomized complete block design with five replications. Chemical analysis of soil and organic fertilizers were conducted. The morphological growth were regularly measured at 2 weeks interval. The interaction between organic fertilizers and harvesting times gave high significant (P).

Keywords: Lempoyang; Zingiber zerumbet (L.) Smith; Organic fertilizer; Quail litter; Goat manure; Harvesting time

AIMC-2018-LS-416

GROWTH OF ZINGIBER ZERUMBET AS AFFECTED BY DIFFERENT ORGANIC FERTILIZER AND HARVESTING TIMES

Corresponding Author: Nurhidah Munawer
Co-Authors: Rozilawati Shahari
International Islamic University Malaysia

Abstract

Zingiber zerumbet (L.) Smith or lempoyang has various application especially in pharmacological field. This study investigated effects of different organic fertilizers and harvesting times on growth of lempoyang grown at Pahang Matriculation College. The 9 treatment combinations were arranged in a randomized complete block design with five replications. Chemical analysis of soil and organic fertilizers were conducted. The morphological growth were regularly measured at 2 weeks interval. The interaction between organic fertilizers and harvesting times gave high significant (P

Keywords: Lempoyang; Zingiber zerumbet (L.) Smith; Organic fertilizer; Quail litter; Goat manure; Harvesting time

AIMC-2018-LS-487

AZADIRACHTA INDICA (A. INDICA) LEAVES AND FLOWERS ETHANOLIC EXTRACTS AS THE POTENTIAL ANTICANCER TREATMENT FOR COLON CANCER

Corresponding Author: JAMUNA THURAI SINGAM
Co-Authors: Wan Nor Syafiqah, Mohd Apandi; Muhamad Afiq Faisal, Yahaya; Nurul Hazwani, Kamarudin; Asyraf Nadia, Mohd Yunus; Naziz Nashriq, Nijar; Rasyidah, Miswandi; Roslina, Jamaludin; Ainul Sharmira, Rosli.

Abstract

Colon cancer has been reported to be the second most commonly occur incidence worldwide. Though a number of treatments are available, however, the number of re-occurrence of the disease remains high. Thus, the present study generally aimed to determine the anticancer property of Azadirachta indica (A.indica) leaves and flowers ethanolic extracts against human colon cancer cell line; HT29 cells. Total phenolic content (TPC) was done to quantify the phenolic compound contained in both leaves and flowers. MTT assay was then performed to determine the half inhibitory concentration (IC50) by both extracts. The results from this study showed that the TPC for A. indica leaf ethanolic extract is 9.03mg/ml respectively, whereas the TPC A. indica flower ethanolic extract is 80mg/ml respectively. MTT assay showed that both extracts possess cytotoxicity effect when exposed to HT29 cell culture. However, flower extract from A. indica showed more potent effect than the leaves extract when the inhibitory concentration (IC50) of both extracts were determined, whereby flower extract is 90.3mg/ml and leaves extract is 183.1mg/ml, respectively. However, this study suggests that the leaves and flowers extracts from A. indica can be further explored in search for the potential anticancer agent for the development of colon cancer treatment.

Keywords: Azadirachta indica, colon cancer, anticancer, ethanolic extract, HT29.

AIMC-2018-LS-519

RELATIONSHIP BETWEEN STATUS OF RESPONDENTS WITH CRITICAL SUCCESS FACTOR (CSF) OF TREE PLANTING WORKS

Corresponding Author: Jasasikin Ab Sani
Co-Authors: Jasasikin Ab Sani, Atikah Mohamed Mustafar, Nur Athirah Ahmad Sharip and Zainul Mukrim Baharuddin
IIUM

Abstract

Malaysia is experiencing a major change in built environment development. It is important to create a country with a balanced between physical development and landscape development. According to Minister of Housing and Local Government in National Landscape Policy (NLP) “… The Beautiful Garden Nation by 2020 was prepared as a comprehensive operational guide to improving the quality of the living environment” (National Landscape Policy). A thorough study of critical success factor of tree planting work needs to be carried out as to control planting work quality in Malaysia. The aim of this study is to identify the relationship between the status of respondents with their views on the critical level of the assessment elements for trees planting works. The status of respondents was

divided into two groups which are ILAM corporate member (ICM) and non-ILAM corporate member (NICM). The test was carried out to investigate the significant level of the relationship between two variables. Respondents of the survey are among 543 Landscape Architect listed in Institution of Landscape Architect Malaysia (ILAM) directory 2008/2009 (ILAM, 2009) in Malaysia. Only 225 out of 543 respondents managed responded to the survey conducted. In this study, independent t-test had been used to investigate the relationship between the status of the respondent and CSF. Finally, the study concluded that the status of respondents has no significant relationship with their views on the critical level of the assessment elements for trees planting work.
Keywords: Respondent status, critical success factor, tree planting works

AIMC-2018-LS-528
CRITICAL SUCCESS FACTOR (CSF) FOR SHRUB PLANTING WORKS
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Co-Authors: Jasasikin Ab Sani, Atikah Mohamed Mustafar, Nur Athirah Ahmad Sharip, Zainul Mukrim Baharuddin
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Abstract
Quality control plays a vital role in producing an excellent built environment construction work. Landscape development as a major part of the built environment requires at par attentions of quality control in the entire process of development including at the implementation stage. Landscape as an important area in achieving the vision of Malaysia Beautiful Garden in the year 2020 undergoes a long process of development to meet the vision. A thorough monitoring process at the implementation stage is needed to ensure the quality of end products of landscape development meet the satisfactory level of the stakeholders. According to Wolf and Wohlfart in 2014, natural environment generates a positive point of view on life, making people feel more active and alive. This statement illustrates that to create a healthy society, it can begin with enhancing natural environment as to build a positive point of view on life.Shrub is one of common soft scape element in landscape design Specific critical success factor (CSF) assessment element for shrub planting should be produced to monitor shrub planting work in landscape construction. This paper prepared to develop critical success factor for shrub planting works in Malaysia. In this study, there was 225 respondent among Landscape Architects successfully responded to survey. The survey began with the assessment elements that had to be rated by respondents according to their general assumption on the critical level of each element. Finally, this research establishes a set of critical success factor for shrub planting. The result shows that eight (8) elements assessment for shrub planting works i.e. overall height, leave, cane, soil mixture, planting hole, root ball size, mulching and planting hole finishing and treatment. The sum of contribution weightage of CSF overall illustrates that leave as the highest score, while mulching indicates lowest score in critical success factor for shrub planting works.
Keywords: Critical Success Factor; shrub planting; quality construction

AIMC-2018-LS-537
COMPARISON OF TWO DISTICT BETASATELLITES-ASSOCIATED COTTON LEAF CURL KOKHRAN VIRUS STRAINS INFECTION WITH THE LEVELS OF MICRO RNAS
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Abstract
MicroRNAs (miRNAs) are endogenous, non-coding, small RNAs that play an important role in regulating gene expression. The study described here was designed to investigate the effects of two distinct strains of Cotton leaf curl Kokhran virus (CLCuKoV), [the strain present in cotton pre-resistance breaking, CLCuKoV-Faisalabad (Fai) and the resistance breaking strain, CLCuKoV-Burewala (Bur)], and their cognate betasatellites Cotton leaf curl Multan betasatellite Burewala (CLCuMBBur) and Cotton leaf curl Multan betasatellite Multan (CLCuMBMul) respectively on the accumulation of developmental miRNAs to know common drifts between the two strains and their cognate betasatellites. CLCuKoV-Fai and CLCuKoV-Bur were inoculated into Nicotiana benthamiana plants alone and also in association with their cognate betasatellites. The results have shown that CLCuKoV-Bur and its associated CLCuMBBur are highly effective up-regulators of host miRNA expression, contrasting strongly with CLCuKoV-Fai associated with CLCuMBMul. Thus, each strain of CLCuKoV induced distinct pattern of response and betasatellites contributed significantly.
Keywords: Cotton leaf curl Kokhran virus, CLCuKoV-Fai, CLCuKoV-Bur, Cotton leaf curl Multan betasatellite, Micro RNA

AIMC-2018-LS-539
TRANSCRIPT MAPPING OF COTTON ASSOCIATED BEGOMOVIRUSES
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Abstract
Viruses of the family Geminiviridae have single-stranded DNA genomes encapsidated in characteristic geminate particles. Economically the most important amongst these are the begomoviruses (genus Begomovirus) that are transmitted by the whitefly Bemisia tabaci. Cotton production in Pakistan and India has been severely affected by cotton leaf curl disease since the late 1980s. The disease was associated with multiple monopartite begomoviruses, including Cotton leaf curl Multan virus (CLCuMuV) and Cotton leaf curl Kokhran virus (CLCuKoV). Following the

introduction of CLCuD resistant cotton lines during the late 1990s a resistance breaking strain of CLCuD evolved, now known as the Burewala strain of CLCuKoV (CLCuKoV-Bur). This is now endemic across most cotton growing areas of Pakistan. CLCuKoV-Bur has a recombinant origin, derived its sequences from two parents; CLCuKoV - Kokhran strain (CLCuKoV-Kok) and CLCuMuV. The study presented here was designed to map the major transcripts of CLCuKoV-Bur for comparison to the transcript maps of its most closely related parent CLCuKoV-Kok and to investigate whether the recombination/mutation events involved in their evolution have affected gene expression at the level of transcription. Northern blotting and RNA ligase-mediated rapid amplification of cDNA ends were used to map the major transcripts of CLCuKoV-Bur, and CLCuKoV-Kok (one of the parents of CLCuKoV-Bur) from infected Nicotiana benthamiana plants and described the upstream and downstream regulatory regions. Two complementary-sense transcripts of ~1.7 and ~0.7 kb were identified for both viruses. The ~1.7 kb transcript is similar in position and size to that of several begomoviruses and likely directs the translation of C1 and C4 proteins. Both complementary-sense transcripts can potentially direct the translation of C2 and C3 proteins. A single virion-sense transcript of ~1 kb, suitable for translation of the V1 and V2 genes was identified. A single complementary-sense transcript was also identified for the betasatellites. Overall the results obtained show that, despite having a truncated C2, CLCuKoV-Bur is a “fitter” virus than either of its parents. The study provides further insight into the possible mechanism of resistance breaking by CLCuBuV-Bur, which at this time remains unclear, and may allow novel mechanism(s) of resistance to be developed, as well as strategies to prevent future resistance breaking.
Keywords: Geminiviruses; Begomoviruses; Cotton; Cotton leaf curl Multan virus; Cotton leaf curl Kokhran virus;

AIMC-2018-LS-546
ANTI-ACCIDENT WRIST BAND (ATRIBA)
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Abstract
Statistic shows that a large increase in road accident due to drowsiness of driver while driving, leads to massive fatal accidents. This project can generate a model that can prevent drowsiness during driving by detecting heart rate and a technique for alerting and refreshing the driver through real-time monitoring. In this study, the purposed system used customized wearable device consist of pulse sensor (heart rate) and global positioning system (GPS) sensor. There was three (3) parts have been integrated-input, process and output. Pulse sensor and GPS sensor acts as an input for data transmission. The data processed by microcontrollers, ESP8266 to transmit the data from the sensors to the server. As output, the alarm and vibrator will disseminated to the driver until the driver awake from fall in sleep and the heart rate back to normal. The real-time location coordinates of the driver will notify the nearest police station or hospital using wireless network if the accident happens. As a result, this wearable device capable to measure the heart rate, dynamically alert the driver and send notification to the police station or hospital regarding on the accident.
Keywords: drowsiness detection; heart rate detection; road accident; GPS sensor; pulse sensor

AIMC-2018-LS-554
CRITICAL SUCCESS FACTOR OF PALM BASED ON FOUR INFLUENCING FACTORS
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Abstract
In landscape works, there are many elements involved to produce a good product and services including choosing the right plant to be planted. In the construction stage, the important is the quality of workmanship for planting works. Therefore, this study is to identify the Critical Success Factor (CSFs) for palm. In this study focus on four influencing factors from keys performance indicator which are defection on palm growth, duration of time consumption, level of cost incurrence (KPIs) and level of work load. Surveys have been done with Landscape Architects through five ordinal values of ten elements for palm. The elements for palm are overall height, trunk height, trunk diameter, leaves or front, root ball size, planting hole, soil mixture, staking, mulching, and finishing and treatment. The result, the average mean of CSF based on four influencing factors shows that threes elements that attained the highest mean are trunk diameter, leaves or frond, root ball size and trunk height. Three lowest mean of CSF are stated for mulching, soil mixture and finishing and treatment. It is hoped that the findings would help to develop quality assessment system for palm planting works.
Keywords: Landscape work; Palm; Critical Success Factor

AIMC-2018-LS-555
CONTRIBUTION WEIGHTAGE FORMULA FOR PALM PLANTING WORKS
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Abstract
In Malaysia, the construction sector seems expected to grow considering numerous projects that will also make more contribution to the economy. The problem in construction project especially related to quality does not comply with specifications and cannot be considered failed but not up to satisfactory level. Construction Industry Development

Board (CIDB) has established Quality Assessment System in Construction (QLASSIC) as a tool to measure the quality of construction work. However, the component of external work in QLASSIC doesn't cover all aspects of soft-scape works. Therefore, the aim of this study is to develop a set of contribution weightage of palm. Questionnaire surveys distribute to Landscape Architects through likert-type scale. The data were then been used to develop a weightage for every element based on Contribution Weightage Formula. The findings reveal that trunk diameter, leave or frond, root ball size and trunk height are the elements that are ranked as the three most critical elements for the success of palm planting work. It is hoped that the findings would help to facilitate the QLASSIC in addressing quality assessment for landscape work. Besides, the findings can be a reference in the process of betterment the quality documents for landscape work in Malaysia.
Keywords: Landscape works; palm, Quality Assessment System, Contribution Weightage Formula

AIMC-2018-LS-625

OPTIMISED METHODS FOR FRIABLE CALLUS INDUCTION FROM MESOCARP OF APPLES (MALUS X DOMESTICA)

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Abstract

Tissue culture has been used as a tool in many plant studies to grow plants in vitro. Initial attempts to initiate callus using previously published reports on apples and pears were not successful as these cells required different growth conditions. In this research, we developed new techniques of initiating and establishing ‘Royal Gala’ friable callus cultures from the fruit mesocarp. We induced the callus using eleven concentration combinations of auxin and cytokinin which were 3 µM 2,4-D:3 µM BAP, 3 µM 2,4-D:2 µM BAP, 6 µM 2,4-D:6 µM BAP, 4.5 µM 2,4-D:2.5 µM BAP, 4.5 µM 2,4-D:3 µM BAP, 4.5 µM 2,4-D:3.5 µM BAP, 4.5 µM 2,4-D:4 BAP, 2 µM 2,4-D:2 µM BAP, 9 µM 2,4-D:9 µM BAP, 4.5 µM NAA:4.5 µM BAP, and 4.5 µM 2,4-D:4.5 µM BAP. Callus growth was monitored at three timepoints; day 0, 15, and 45 (end of incubation). Callus cultured on 4.5 µM 2,4-D:2.5 µM BAP, 4.5 µM 2,4-D:4 µM BAP, and 4.5 µM 2,4-D:4.5 µM BAP showed the most friable callus with 50%, 60%, and 100% friability, respectively. 4.5 µM 2,4-D:4.5 µM BAP produced the largest growth, friable, yellow, and granulated. The rest of the mediums produced stiff callus and little growth.
Keywords: Apple; Tissue culture; Callus; Auxin; Cytokinin

AIMC-2018-LS-628

ENVIRONMETRIC STUDY ON AIR QUALITY PATTERN FOR ASSESSMENT IN KLANG VALLEY

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Abstract

Air pollution has become one of the environmental major issues in Malaysia due to the increasing number of transportation, the industrial activities and trans-boundary pollution from the neighbouring countries. Emissions from road traffic, infrastructure works, sea and air traffic and industry are directly responsible for air pollution. The objective of this study was to determine the significant pollutant parameters contributing to air quality issues and to identify air quality pattern at five air monitoring stations in Klang Valley, Malaysia for the years of 2010 until 2014 (five years). The dataset was derived from Department of Environment, Malaysia (DOE). Air pollution index (API) such as O3, SO2, CO, NO2, and PM10 were examined in this study. Environmental metric techniques used was cluster analysis (CA) in order to determine the air quality pattern based on yearly and specific monthly basis. Discriminant analysis (DA) was used for differentiating each class. The study found that there were establish different variables between each class. Principal component analysis (PCA) combined with factor analysis (FA) were used to identify the significant pollutant parameters based on five pollutants/gases in air pollution index (API) which cause by many activities either internal or external factors. As a result of using the environmetric technique for analysing the data, it contributes to a better understanding of air quality pattern and clearly identified the significant air pollutant parameters.
Keywords: Pollution parameters; environmentric techniques; air pollution; API index

AIMC-2018-LS-657

EMPIRICAL REFLECTION ON THE EFECTIVITY IMPLEMENTATION OF COMMUNITY EMPOWERMENT IN THE MOUNT MERBABU NATIONAL PARK

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Abstract

The research background focuses on the main problem facing the buffer zone community in the national park that is poverty. This study aims to investigate community empowerment based on local wisdom. Evaluative research method, Comparative study related to the application of conservation village model in various national parks in Indonesia.

Community empowerment based on local wisdom is aimed at people living around the conservation area to gain access, and be actively involved in efforts to manage and utilize conservation areas. Data collection methods used are documentation, interviews and observation. Data analysis technique used is interactive data technique consisting of three steps, namely: data reduction, data display and data verification. Data source: secondary data and primary data. Primary data were obtained through: a). Interviews with national park officials consisting of (PEH, Functional Workers and Forest Police), rehabilitation farmer group incorporated in SPKP, MMP, and community of buffer zone of Mount Merbabu National Park which is considered to understand problems that the author thoroughly. Research Result: Community empowerment implemented by the government (BTNMB) has less benefit that can be felt significantly by the buffer zone communities around the national park because it is not designed based on basic need of society, the society is treated as an object. a) There has not been a significant increase in people's welfare and income b) There has not been institutional formation as a forum for participatory village planning, c). Not yet the formation of an intensive companion role in the implementation of the program d). There is still a disruption to the conservation area, e). Increased awareness of the community towards the conservation of my natural resources and energy f) Assistance given not in accordance with the needs and conditions of society. g) No comparative studies related to the program being undertaken, this activity aims to increase knowledge and competence of community members, h) capacity building programs appropriate to the community's capacity i) The lack of monitoring and evaluation of programs implemented internally. j) The implemented program is unsustainable.
Keywords: Effectiveness, Implementation , Community empowerment , Mount Merbabu National Park

AIMC-2018-LS-662

STATISTICAL APPROACH ON BIOETHANOL PRODUCTION FROM LIQUID PIENAPPLE WASTE USING IMMOBILIZED SACCHAROMYCES CEREVISIAE VAR ELLIPSOIDEUS

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Abstract

Bioethanol is among the alternative fuels to the depleting fossil fuels. Determination of factors that significantly affect the production of bioethanol would greatly contribute to optimized production. Liquid pineapple waste could be an excellent substrate for bioethanol production due to its high content of fermentable sugar. The use of immobilized microorganism has been shown to greatly improve bioethanol production. This study aim to investigate bioethanol production from liquid pineapple waste using immobilized Saccharomyces cerevisiae var ellipsoideus in PVA-alginate-sulfate beads. Statistical approach using 2-level full factorial design with 4 variables; initial inoculum (3-6g), temperature (30-50oC), pH (4.5-5.5) and agitation speed (100-200 rpm) was conducted. Results show that the highest amount of bioethanol produced is 10.0438 g/L at pH of 5.5, temperature of 30 oC, and 200 rpm using 3g of beads. Field Emission Scanning Electron Microscope (FESEM) images show that S. cerevisiae var. ellipsoideus was successfully immobilized in the immobilized matrix.

Keywords: Bioethanol; immobilization; Saccharomyces cerevisiae var ellipsoideus; liquid pineapple waste; 2-level factorial design; PVA-Alginate-Sulfate beads

AIMC-2018-LS-704

CUMULATIVE EFFECTS ASSESSMENT: A MANAGEMENT PROSPECTIVE FOR ASIAN MULTI-FUNCTIONAL COASTAL WETLANDS

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Abstract

Cumulative Effects Assessment (CEA) tool provided an insight on the extent of effects on the multifunction of wetlands which consequently decreased provision of human well-being. Effective management strategy can then be done to balance development and wetlands ecological integrity and human well-being. For an effective management intervention, the pathways of cumulative effects was traced and further assessment of the interactions among drivers (stressors) as well as their interactions with wetland components and human well-being are important to understand.Quantifying the predicted impacts of the cumulative effects using binary logistic regression and other statistical tests provided veritable picture of the state of wetland ecosystems. Multi-factorial analysis intrinsic to CEA is seen as a relevant approach to the wetland multifunction. The developed CEA methodological approach overcomes the difficulty of quantifying cumulative effects in which an enormous data complexity on interactions of numerous drivers (stressors) and multiple functions existed.

Keywords: Cumulative Effects Assessment, CEA, wetlands

AIMC-2018-LS-708

DETERMINANT AND RESOURCE USE EFFICIENCY OF CLIMATE-SMART AGRICULTURE (CSA): AN INNOVATIVE CLEANER PRODUCTION ALTERNATIVE OF COTTON IN PUNJAB, PAKISTAN

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Abstract

Climate-Smart Agriculture (CSA) was introduced by Food and Agricultural Organization (FAO) during 2010 for combating a major challenge i.e. the adverse effect of climate change on agricultural productivity, sustainability and farm income. Cotton is one of the important cash crops of Pakistan. It is a climate sensitive crop which is being suffered to multiple shocks over the time, resulting in yield variation and market failures. The present study aimed to estimate and compare the technical, economic and water use efficiency of adopters and non-adopters of CSA in cotton production and also identified the factors determining the resource use efficiency. The study was conducted along Lower Bari Doab Canal (LBDC) irrigation system in Punjab, Pakistan during Kharif 2017. The adopters of CSA were identified after conducting six focus group discussions in the study area. First-hand information was gathered through a well-structured and comprehensive questionnaire from 133 adopters of CSA and 65 farmers cultivating cotton with traditional methods. Input-oriented Data Envelopment Analysis (DEA) technique was employed to investigate the technical, economic and water use efficiency, assuming the variable return to scale. The bootstrap truncated regression was used to identify the factors influencing the resource use efficiency of cotton growers. The empirical findings showed that the adopters of CSA were using inputs more efficiently. They were found to be financially stronger, fast adaptation behavior towards environmental changes, and socially superior to non-adopters as for as cotton production in the study area. The analysis also highlighted that adopters produced more output per cubic meter irrigation water than non-adopters of CSA. The results of bootstrap truncated regression analysis revealed that access to credit, extension services, climate-smart agriculture, quality of groundwater, ownership of tubewell, and family status significantly affected the technical, economic and water use efficiency of cotton farmers. Therefore, it has been observed that CSA practices and technologies i.e. water-smart, energy-smart, carbon-smart, and knowledge-smart can play an influential role in helping cotton farmers to use inputs in an efficient way. It is suggested that broad and effective policies should be devised to suffice farming community for CSA to minimize the impact of climate change on agriculture and to save a large amount of irrigation water. The agricultural extension department should launch an awareness campaign about benefits of CSA practices and technologies, using print and electronic media in cotton growing areas of Punjab.

Keywords: climate-smart agriculture; water-smart; Knowledge-smart; bootstrap truncated regression; water use efficiency; economic efficiency; Pakistan

AIMC-2018-LS-786

DO WILD-CAUGHT URBAN HOUSE SPARROWS SHOW DESENSITIZED STRESS RESPONSES TO A NOVEL STRESSOR?

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Abstract

While urbanisation exposes individuals to novel challenges, urban areas may also constitute stable environments in which seasonal fluctuations are buffered. Baseline and stress-induced plasma corticosterone levels are often found to be similar in urban and rural populations. Here we aimed to disentangle two possible mechanisms underlying such pattern: (i) urban environments are no more stressful or urban birds have a better ability to habituate to stressors; or (ii) urban birds developed desensitized stress responses. We exposed wild-caught urban and rural house sparrows (Passer domesticus) to combined captivity and diet treatments (urban vs rural diet) and measured corticosterone levels (cortf) both in natural tail feathers and in regrown homologous ones. Urban and rural house sparrows showed similar cortf levels in the wild and in response to novel stressors caused by the experiment, supporting the growing notion that urban environments are no more stressful during the non-breeding season than are rural ones. Still, juveniles and males originating from urban populations showed the highest cortf levels in regrown feathers. We did not find evidence that cortf was consistent within individuals across moults. Our study stresses the need for incorporating both intrinsic and environmental factors for the interpretation of variation in cortf between populations.

Keywords: feather corticosterone; passerines; aviary; urban exploiter; moult

AIMC-2018-LS-875

SOFT-SCAPE QUALITY ISSUES IN MALAYSIA LANDSCAPE CONSTRUCTION INDUSTRY

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Abstract

Over the past decade, concerns have been expressed on quality of construction products and processes. Massive developments experienced by the construction sector in Malaysia have led to a devastating compromise in quality. The problem in construction project especially related to quality such as building does not comply with specifications and sub-standard still exists. Attainment of acceptable level of quality in construction has long been a problem. Landscape construction in general is part of the total construction and is not exempted from the same problem. In general all of them referred to quality as conformance or compliance with specification. Therefore, the aim of this research is to evaluate the soft-scape quality issues in Malaysia. This research is looking at the responses given by the respondents on landscape quality management system, related to QLASSIC as quality assessment tool and the investigation of respondents’ experiences on soft-scape specification in Malaysia. Respondents of the survey are among Landscape Architects from various landscape organizations which are landscape consultant, landscape contractors, developers, government agencies, and educational institutions. The findings of the research are about the issue of landscape quality management in Malaysia in general. Majority of the respondents are not aware or unfamiliar with

the quality management system that has been practiced in Malaysia including on landscape work. However, majority of the respondents claim that they are familiar with the process of quality control during construction on site. Generally, responses from the survey have shown the level of dissatisfaction of respondent on soft-scape quality in Malaysia. The state of dissatisfactory is shown by the responses on level of conformance of soft-scape work to the specification requirements for the projects.

Keywords: Landscape Construction; Soft-scape Work; Construction Quality

AIMC-2018-LS-934

SEDIMENTOLOGY OF SEMANGGOL FORMATION AT POKOK SENA, KEDAH

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Abstract

Through time, the excavation and earth quarries activities have been increased rapidly and this process also occurred at Pokok Sena, Kedah. Due to this activites, the study on the sedimentary depositional processes which related with Mahang Formation, Kubang Pasu Formation and Semanggol Formation is achievable. The research is intended to discover the boundary that have been separated the three formations. The localities visited for this research are Kg. Kebun 500, Kg. Jabi, Wood Factory area, Kg. Rambutan, Bukit Barak Quarry and Bukit Tembaga. The localities are believed to be part of chert unit and might be part of rhythmite unit. Through the visitation, the main lithofacies found are bedded chert, black mudstone, interbedded sandstone and shale, siliceous shale, interbedded chert and shale and massive sandstone. There are some turbidite deposits such as load casts and mud clasts. Observing the distribution of the lithology deposited within the research study area, it can be suggested that the depositional setting is deep marine environment. The presence of turbidite deposits might due to the turbidity currents that existed during the deposition of the rhythmite unit. This comes to the preliminary conclusion that the research study area is near to the rhythmite unit area. However, more study need done to define the depositional process accurately. The preliminary results are recorded using the sedimentary loggings.

Keywords: chert unit; rhythmite unit; Semanggol Formation, depositional process; lithological boundary; formation boundary

AIMC-2018-LS-984

BIO-CONTROL AS ALTERNATIVE FOR SAFER CLIMATE, HEALTH, FOOD AND HABITAT

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Abstract

Bacillus thuringiensis (Bt.) is gram positive bacterium which forms endospores and produces parasporal crystals. Bt. Isolates were characterized by gram staining and different biochemical tests. Bioassays were performed. It was found that the active toxin without first 28 amino acids is lethal to E. coli cells. Various alternative local media have successfully replaced costly commercially available media. We were able to develop an active formulation by using locally available ingredients like water, sugar, antifoam solution, wheat flour, milk powder and gum Arabica. Toxin-receptor interaction was analyzed by using four different cry proteins. Western blotting, ligand blotting and alkaline Phosphatase (ALP) assay was performed to identify binding-proteins/receptors. From LC-MS/MS data we concluded that the proteins which are possibly important in the mechanism of action of cry proteins are ALP receptors, APN receptors, ABC transporter, Cadherin-like receptors, glycerol-3-phosphate dehydrogenase, ATP synthase b, epoxide hydrolase, elongation factor-1 alpha, shock protein 90, mitochondrial prohibitin complex protein 2, NADPH cytochrome b5 reductase, V-ATPase subunit A, alpha-amylase, spectrin, clathrin, innexin and some other unknown proteins. We are reporting these proteins for the first time which can be probably the receptors of Cry proteins.

AIMC-2018-STEM-17

SELF SUSTAINABLE ENERGY HARVESTING SYSTEM

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Abstract

Electrical energy demand is increasing massively across the world due to population growth. From literature, the continuous growth of current population will be double within next 50 years as well as energy demand will be triple based on the current demand. This paper presents an effective and innovative self-sustainable energy harvesting system. Here, an approach to developing a case where electrical energy can be produced is presented. The proposed energy harvesting system consists of an uninterruptible power supply (UPS), motor, voltage stabilizer, pendulum, controller, dynamo, solar panel, and gearbox. The dynamo is mainly run by motor rotation. Pendulum and gearbox work as energy booster factor. The total system dynamically monitors by smart controlled. The subsystems work together to automatically generate energy. The main aim of this research is to provide a reliable solution for energy limitations due to the increasing demand for energy around the world. The produced energy of the system can be determined by the position of gear base on rotation of Pinium which make the system sustainable.

Keywords: Dynamo; Motor;Generator;Pinium;Torque;Voltages Stabilizer

AIMC-2018-STEM-19

AN IMAGE DENOISING METHOD BASED ON MULTI RESULATION BILATERAL FILTER

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Abstract

Bilateral filter is a nonlinear filter and the method image edge information mainly in filtering considers both gray level similarities and geometric closeness of the neighboring pixel without smoothing edges . Based on the study and research of bilateral filter found of the bilateral filter is well suited to image denoising. The bilateral filter is appropriate for color and grey picture filtering system with strong performance. It has appeared to be a successful picture denoising procedure. We can use it to the blocking artifacts reduce. A vital issue with the program with the bilateral filter is the choice of the channel parameters which influence the outcomes essentially. Other hand research interest of bilateral filter is increasing speed of the calculations rate. There are three main efforts of this dissertation. First I will discuss about empirical study of the optimal selection of parameter in image denoising. Here I proposed a development of multi resolution bilateral filter where bilateral filter is used to the low frequency sub-band of an signal decomposed through wavelet filter. Multi resolution bilateral filter combined with wavelet thresholding to develop a new image denoising development which finished up to be very efficient in noise eliminating in real noisy image. Second contribution is a flexible method to reduce compression artifacts for avoid over smoothing texture areas and to effectively eliminate blocking and performing artifacts. In this research first detected the block boundary discontinuities and texture regions these are then use to manage the spatial and strength parameters of bilateral filter. The analyze outcome confirm that the suggested method can improve the quality of renewed image far better than the most preferred bilateral filter. Third part is the development of the fast bilateral filter which is convenience for combination of multiple windows to estimate the Gaussian filter more accurately.

Keywords: Bilateral Filter; Image Denoising; Multi Resolution

AIMC-2018-STEM-21

LAND USE AND CHANGES IN THE LAND COVERAGE- FINDING IN DEHRADUN CITY, UTTARAKHAND, INDIA: ANALYSIS USING GIS & REMOTE SENSING TECHNIQUES.

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GEHU

Abstract

Land is among the most important natural resources which cover about 30% of the total area of the earth surface. It is the prime and a vital resource for man. Most of the large cities around the India have experienced rapid growth in the past decades.An attempt has been made in this research paper to detect the land- usage pattern changes and land-cover changes of Dehradun city of India during the period of last 20 years after being the capital. Due to population explosion, the inner and outer areas of the Dehradun city have undergone revolutionary changes in their land use. The city was famous for its Litchi & mango groves & fields of Basmati Rice throughout the world. Till 1990 DehraDun was feeding high quality Basmati Rice to other parts of India and now the production is so negligible that it is not even sufficient to feed DehraDun people. It is also observed that Bindal river & Rispana River have undergone a sea change in their status.The study has been conducted through the digital maps using remote sensing approach using earth explorer maps of DehraDun map. The aim of this study is to detect LU/LC (Land use and Land cover) changes among 2000, 2009 & 2017 using satellite images of Landsat maps have been used. The objective is to produce maps of evolution of Dehradun city with respect to urban expansion and relation with residential, transportation, commercial, population, educational opportunities etc. Land use changes have been seen by ERDAS imagine and ArcGIS. Monitoring of LU/LC changes would help to plan development activities such as major schemes and their land requirements. In the span of seventeen years from 2000-2017 shows a major land use changes forest areas is decreasing day by day and build up area is increasing.

Keywords: Land use/ land cover, digital maps, GIS, change detection, satellite images

AIMC-2018-STEM-23

THE DEVELOPING STUDENT WORK BOOK OF FRACTION MATERIAL FOR THE FIFTH GRADER USING OPEN ENDED APPROACH AND THINK PAIR SHARE COLLABORATIVE LEARNING

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Abstract

This research is research and development (R&D). The aim of the research is to know: 1) The factual condition of the student work book usage in elementary school, 2) The development of student work book using open ended approach and think pair share (TPS) collaborative learning in the material of fraction in class V, 3) Work book with open ended approach and TPS collaborative learning of fraction material in class V that valid, 4) The influence of student work book with open ended approach and TPS collaborative learningtoward the student achievment in fraction material in class V, 5) Teacher’sresponse toward the student work book with open ended approach and TPScollaborative learning in fraction material in class V, 6) Student’s responsetoward the student work book with open ended and TPS collaborative learning infraction materian in class V. The researcher used 4-D development model

throughdefiniton phase, designing, and development. This research result student workbook validator questionnaire, the data got is very valid (4,3) and affects tostudent’s learning achievment. Beseides, the teacher’s response toward studentwork book shows average number 4,13 as good criterion. While for the student’sresponse, sum of the student who chose option a and b of the answer option was85.15%.
Keywords: student work book; open ended approach; think pair and share (TPS); research and development (R&D)

AIMC-2018-STEM-30

MAPPING FLOOD PRONE AREAS USING SENTINEL-1 SATELLITE IMAGERY: A CASE STUDY NORTHERN PART OF KELANTAN, MALAYSIA

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Abstract

Natural hazards including landslides, volcanic eruptions, flash floods, earthquakes and hurricanes have been constituted a significant problem in many countries. The most considerable hazard in Malaysia is flooding, which mostly triggered by heavy monsoonal rainfall. The recent flood in November 26, 2017 have induced many problems in northern part of Kelantan. This paper aims to map flooded areas in the region by using RADAR imagery of SENTINEL-1 without using any automated classifier or machine algorithms. A total number of two satellite imageries of SENTINEL-1 for the dates 18/11/2017 (Before event) and 30/11/2017 (After event), were collected. However, using SENTINEL Application Platform Software (SNAP) the images were corrected, stacked and combined in order to map flooded areas. Results indicate that this kind of flood mapping is precise, fast and easy to use. Furthermore, using confusion matrix and a few Ground Control Points (GCPs) the final map was validated. However, the overall accuracy and Kappa coefficient was 94.5023% and 0.9189, respectively. This paper can be helpful to policy and decision makers in order to map flooded areas immediately, especially when we need quick action for settling camps for evacuees.
Keywords: Flood mapping, SENTINEL-1, Kelantan, Malaysia

AIMC-2018-STEM-31

ENVIRONMENTAL RESTORATION: CLAY AS ENVIRONMENTAL RESTORATION MATERIALS IN THE BUILT ENVIRONMENT

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A B U Zaria

Abstract

Building materials is an important aspect within the design and building construction process, having a great influence on the restoration and quality for the built environment. The objective of this paper is to identify the social, economic, environmental and restoration aspects of clay for the built environment. Environmental degradation in developing countries leads to incorporating clay building products: bricks, roofing slates, toilet and floor tiles clay pipes and sanitary appliances in most present projects in the built environments. This research was carried out in suitable civil and building construction companies in Katsina, Kano and Kaduna states in northern Nigeria. The research findings identified that economic aspects has the highest potentials for restoration degraded built environment
Keywords: Building Materials, Environmental Restoration, Clay Products, Built Environment, degradation.

AIMC-2018-STEM-57

GRAPHENE OXIDE AND CARBON NANOTUBES ELECTRODEPOSITION ON PLATINUM ELECTRODE

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Abstract

Initial surface morphology of graphene oxide (GO) and single-wall carbon nanotubes with carboxylate group (SWNT-OH) were studied by FE-SEM and Raman analysis. Nanomaterials were deposited on top of platinum electrode by electrodeposition process. Deposition time was done in 10 second with 0.05 A of current applied for each electrode process. Voltage of interest study was varied (5,10,15 and 20 V) in order to have correlation between the quantity of electricity and the properties of the nanostructured film. Raman peak spectrum for GO and SWNT-OH appeared at 1595 cm−1 and 1580 cm−1, respectively. In this work, the strongest resonance of Raman scattering was used to detect graphene oxide and carbon nanotubes. Optical microscope result gives a brief idea on the electrode deposition scattering pattern on top of 1.8 mm2 platinum surface area.
Keywords: Graphene oxide; carbon nanotube; electrodeposition

AIMC-2018-STEM-64

EFFECTS OF ADDING FAT, OIL, AND GREASE (FOG) WASTE FROM GREASE TRAP ON VOLATILE FATTY ACIDS (VFA) ACCUMULATION IN AN ANAEROBIC DIGESTER OF FOOD WASTE

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Abstract

Volatile Fatty Acid (VFA) is an indicator process of an anaerobic digester that run well or not. This research was aimed to determine the suitability between of FOG wastes, and food wasteand cow mannure that was operated using AD on VFA accumulation by evaluating the performance of those AD waste based on the effluent quality. The conducted effluent tests were pH, temperature, TS, VS, COD, ammonia, VFA, and alkalinity. This research used Continuous Stirred Tank Reactor (CSTR) with it capacity of 500 L and area of work about 400 L that works mesophilic by its averages temperature and pH, were 29 ± 0,90 ºC and pH 6,2 ± 0,71, respectively. To operate the reactor using Organic Loading Rate (OLR) 10 Kg VS/m3 and stirring 30 rpm for 4 hours/day. Acclimatization used inoculum from AD Process of food waste and cow rumen. After the AD process is stable, adding food waste and cow mannure was carried out by ratio 9:1 until exceeding steady state. The steady state is gained when the averages of COD, %VSD, ammonia, and pH, exceeding 55.51 ± 4.3 %, 75.82 ± 4.91, 1.19 ± 0.08 g/L, and 5.96 ± 0.23, respectively. Eventually, the AD Process was continued by adding GTW that was mixed with food wasteand cow mannure in ratio 1:7 and 1:2. An addition of GTW in the variation of 1:7 indicates a result test that is significantly different with its t-test (t Stat > t critical) and its level of confidence about 95%. Results of testing are acquired averages of COD, VSD, ammonia, and pH, are 58.77 ± 2.24 %; 88.89 ± 5.49%, 1.18 ± 0.12 g/L, and 5.78 ± 0.28, respectively. The research by adding GTW with ratio variation of 1:2 is still ongoing until the end of February 2018.

Keywords: Anaerobic Digester; Fat, Oil, and Grease; Volatile Fatty Acid; Long Chain Fatty Acid; Grease Trap Waste; Food Waste

AIMC-2018-STEM-65

IMPROVING CONSTRUCTION SAFETY PERFORMANCE THROUGH ENHANCEMENT OF WORKERS SAFETY CLIMATE

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Abstract

Malaysian construction industry has been recognised as the major economic forces that has contributed 9.7% towards Malaysian Gross Domestic Products (GDP) or RM166 billion in value. Besides been a strong contributor to nation economy, its reputation and image has been tarnished by high rates of accidents and fatalities incidences that have occurred on construction sites. It is very crucial for the construction industry to shift from passive approaches to reactive approaches that promote safe behavior among workers by changing their perception about safety known as safety climate study. Previous studies shows many factors may contribute to the development of positive safety climate among construction workers. Understanding the current safety climate practices may save resources and giving priority to the improvement of safety on construction projects. The aim of this study is to assess the current status of the safety climate practices in Malaysian construction projects followed by identification of important factors which can lead to positive safety climate from different view of all levels of construction workers.To accomplished this aim, a quantitative approach using questionnaires has been adopted since it is most effective and cheaper compare to other methods. A total of 500 questionnaires were distributed to top management, supervisors, consultants and general workers across the construction projects. Fifty nine percent (59%) of the respondents respond successfully to the questionnaires. The analysis methods includes the Gap Analysis, Importance-Performance Analysis (IPA), descriptive analysis and development of the safety climate framework using Structural Equation Modelling (SEM). Structural Equation Modelling (SEM) were employed to seek the relationship between safety climate factors and safety performance. The safety climate framework was validated by the safety experts from the construction industry. The results show that the current status of safety climate practices in Malaysian construction projects need for further improvement especially on management concern about safety issues, provision of safety equipments on site, provision on safety incentives, effective safety management system and reducing stress at work. Analysis also shows that there are no significant differents between factors affecting safety climate among different types of construction personnel. The safety climate framework also suggests that there are two major factors which influence safety performance which are Safety Management and Personal Behaviour. Safety Management includes improving safety communications, effective site safety meetings, safe work environment and clean workplace. Personal Behaviour includes feedback on safety issues, regular safety inspections and families support to construction workers. Integration between these two factors will help in improving safety performance on construction site.

Keywords: construction safety; safety management system; perception; framework

AIMC-2018-STEM-66

CONSTRUCTION WORKER'S MOTIVATION: BARRIERS AND STRATEGIES

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Abstract

Motivation is important in an organization because it leads to the production of better quality. High motivation give encourage to workers to do a good job. Various efforts were made to increase motivation and the achievement of motivation is temporary and it requires continuous effort. The engagement of employees is closely linked with employee motivation. Low employee engagement shows low employee motivation. A recent study shows that 83 percent of workers from a worldwide feel disengaged at work, while in Malaysia recorded a value of 89 percent. This indicates that to motivate employees is quite challenging and not an easy task. Thus, this study aims to identify the barriers in motivation faced by the contractor in the construction industry and strategies to overcome the barriers. The study was conducted on G7 contractors in Johor Bahru and Kuala Lumpur. The questionnaire is close ended question with 5-point Likert scale was used to collect data. From these data, the analysis was made using frequency analysis that shows the percentage in the form of tables and bar charts and also uses the calculation of the mean and standard deviation to obtain ranking position with the help of Microsoft Excel 2010 and SPSS 20. The findings of the study showed that the main barriers in motivation are poor communication skills, short-term projects, policy organizations, the injustice and the phenomenon of burnout. As for motivation strategies to deal with the barriers in motivation is to improve communication skills, fast respond, identify self-strengths and weaknesses, set vision and goal and appreciate the peculiarities of each individual

Keywords: construction industry; motivation; barriers; strategies; human capital

AIMC-2018-STEM-70

EFFECT OF WOOD VINEGAR ON COMPOSTING PROCESS AND PLANT GROWTH

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Abstract

Wood vinegar or pyroligneous acid is typically consumed in agriculture activity to facilitate composting process. Composting process were done to evaluate the effect of wood vinegar. The wood vinegar, together with the palm oil mill effluent (POME) sludge, decanter cake and rice husk were utilized for the preparation of organic compost. This paper presents an experimental study of the effect of wood vinegar at different concentrations on the growth of microbe by using the solution with the ratio of wood vinegar to distilled water of 1:100, 1:200, 1:300, 1:400 and 1:500. This paper also presents the preparation of compost that made up of POME sludge, decanter cake, rice husk and wood vinegar at different concentrations. To support the findings, the physical and chemical properties of the compost were analyzed, and the effectiveness of wood vinegar was further proven by conducting field test on Chinese kale plant. The growth rate of the plants was evaluated based on the height of the plants, size of the leaves and the number of leaves. Through the experimental study, compost made with 1:500 ratio of wood vinegar to distilled water shows a significant result. Overall, the experimental results indicate that the wood vinegar at low concentration could be the best promoter for plant growth.

Keywords: Wood vinegar; Palm oil mill effluent (POME) sludge; decanter cake; rice husk

AIMC-2018-STEM-81

MULTICRITERIAL APPROACH FOR CRITERIA RANKING OF FACADE CONDITION ASSESSMENT OF THE OLD SHOP HOUSE BUILDINGS

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Abstract

A model is constructed for Façade Condition Assessment of the old shop house buildings on the basis of a methodology that incorporates structured expert judgment and analytic hierarchy process (AHP). The model calculates the level of façade elements, which comprises of cornice, upper level and lower level. In particular, structured expert judgment criteria used to rank the most significant elements, which could effects the condition of the facades. In addition, the AHP approach used for the classification of façade condition index of slight imparity, minor imparity, moderate imparity, high imparity or total impairment results from preliminary assessment. A simulation model is presented to demonstrate the use of the proposed methodology.

Keywords: Analytical Hierarchy Process (AHP), Shop house, Façade Condition Assessment

AIMC-2018-STEM-94

DIRE DETERMINANTS FOR PAYMENT-RELATED ISSUES IN THE MALAYSIAN CONSTRUCTION INDUSTRY: CLIENT'S PERSPECTIVE

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Abstract

Delayed in payment and financial difficulties are seen to be major factors that cause a delay in the construction project in Malaysia and indirectly may jeopardize the overall success of the construction project. Payment problems is a sensitive issue and have aggravated when compared with past and must be addressed from the root causes to ensure that the project will be completed within the time, cost and quality and parallel with Construction Industry Transformation Plan (CITP 2016-2020) under thrust Quality (Q1) and Productivity (P1). In construction industry scenario, a few days of delay in payment is a convention and if the situation is not addressed at the early stage, the delay of payment due from the client to the contractor may become worse and the contractor may not get paid at all. Therefore, the aim of this paper is to investigate on the dire determinants (DD) for each payment-related issues in the Malaysian construction industry from the Client’s perspective. In this research, questionnaire survey and semi-structured interview conducted to the G7 CIDB Contractors and Client registered with (REHDA) representatives. The finding of the research shows that poor quality of works and contractor works do not adhere to required standard specification became a dire determinant for late, non and under payment. This research concludes by accentuating the issues on payment and the needs for a research to be conducted to ensure the industry is kept abreast with the latest data on payment-related issues in the construction industry in Malaysia and will be able to fill the gaps between theory and practice towards payment-related issues in Malaysian construction industry.

Keywords: Payment, Determinant, Client, Construction

AIMC-2018-STEM-96

ANALYSIS OF METACOGNITIVE SKILL OF UNDERGRADUATE STUDENTS IN SOLVING MATH PROBLEMS

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Abstract

This study aimed to reveal metacognitive skill of undergraduate students in mathematics education major, in solving mathematics problems. Metacognitive skill prefer to procedural knowledge needed to control one’s learning habits. This skill can help in planning several effective strategies and find the most efficient strategy to achieve the goal or make a right decision to solve the problems. To understand and analysis metacognitive skill in mathematics, this research used math test which was examined 22 undergraduate students in mathematics education major from an University in Bandung by followed interviews. The topics in the test were about trigonometry, triangle, and algebra. The other sources of the data are from essay and questionnaire of metacognitive skill. After that, the qualitative research method was used to analyse the data. The result shows that the majority approached the questions by some various strategies. About 85% participants could make plan to find solution by several attempts using various formulas. They performed identifying and formulating the problems, drawing triangle, putting forward several suspicions or temporary solutions and the strategies used, and then finding the solution and make conclusion about the most effective strategy to solve the problems.

AIMC-2018-STEM-118

HEURISTIC EVALUATION OF E-SHOPPING WEBSITES TO REACH THE WOMEN IN PAKISTAN

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Abstract

Online shopping is proliferating over the last years. Although the online shopping can be very convenient but there are some potential problems that require reasonable attention in order to increase the user likelihood of making shopping online. Consumers exhibit different behavior while shopping online. Some perceived differences between male and female consumers exist. Pakistani female consumers face more difficulties as they do not frequently use internet. Previous studies has investigated some problematic heuristic. There is a further need to extend the study for finding common heuristics problems in way of generalization of shopping web pages. This study adopted the quantitative research method to add empirical evidence in previous studies and to lead toward the generalization of online shopping websites. Nielsen heuristics principles, free flow inspection method and severity rating was used in the user testing evaluation. This study evaluates the four e-shopping websites to investigate the common women heuristics problems. This study found that ‘help and documentation’, ‘error prevention’ and ‘flexibility and efficiency of use’ were common heuristics problems that Pakistani women face in interaction with shopping websites. This study added evidence in pervious findings and leads towards the generalization of e-shopping websites. It also added evidence that women perceived more problems and show different behavior on internet.

Keywords: E-Shopping; Heuristic Evaluation; Usability; Women

AIMC-2018-STEM-121

ON THE ACCURACY OF THE IMPROVED RUNGE-KUTTA METHODS

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Abstract

In this paper, a prior estimate of the local truncation error in the Improved Runge-Kutta (IRK) methods with s stages has been discussed. Error bounds, step-size bounds and the Principal Error Function of the methods have been derived. These error bounds have been used to check the number of iterations required prior to solve an initial value problem in ordinary differential equations. Comparison with classical linear Runge-Kutta methods having same number of stages per integration step has been shown to prove the better performance of these IRK methods in terms of the error bounds of the local truncation errors and bounds for the constant step-size length used by the methods.

Keywords: Error estimate; Error bound; Principal Error Function; Improved Runge-Kutta methods.

AIMC-2018-STEM-130

RADON TRANSFORM BASED SKEW DETECTION AND CORRECTION ALGORITHM FOR SCANNED MULTIPLE-CHOICE FORMS

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Abstract

As an extension of our previous work this paper presents an enhanced skew estimation and correction algorithm for multiple-choice (MC) forms. It involves a synergy of the Radon Transform with high precision hit-and-miss algorithm in determining the amount of skew in MC form images, prior to optical mark recognition (OMR) which require properly aligned text lines and edges. As other existing Radon transform based techniques resolve to determining skew angles based on only a single peak regardless of its efficacy, the proposed algorithm first detects the nature of the form (either standard OMR design or custom made) and then automatically optimize the selection process for the number of peaks necessary for the estimation of the correct skew. Skew in this context refers to the tilt or in-alignment of edges in degree which is neither parallel nor at right angles to a specified or implied boarder. It is therefore essential to detect and correct the skew at the pre-processing stage in order to avoid perturbation of skew during further processing and extraction of answers. Experiments on various form designs were conducted and an overall accuracy of over 98% has been achieved which shows the superiority of the proposed algorithm. Furthermore, a comparative analysis with other reported algorithms has been made to prove the efficacy of the proposed technique. This technique works well in correcting the skew even with lower resolution images and on those with background variations such as blurring, thus in-line with the future use of phone camera images.

Keywords: skew detection; Radon transform; Optical mark recognition

AIMC-2018-STEM-131

MULTIPLE-CHOICE BASED ASSESSMENT SYSTEMS AS A MODERN AGE OF LEARNING AND EVALUATION: A CASE STUDY

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Abstract

In the world today, the use of multiple-choice (MC) based assessment system has not only dominated the learning environment, starting from small pre-schools up to the academia, but also in other activities such as market survey, census, and elections to mention a few. The adoption and rapid growth of this system of assessment goes hand in hand with the automated systems or methods used in grading or extracting the responses from the MC forms. These methods of assessment have now evolved to using Automatic Form Processing technology particularly Optical mark recognition (OMR) machines and digital image processing techniques. Traditionally, hard copy MC forms are filled in by hand and then scanned or captured into digital form for processing. The different types of such automated systems, their flexibility and robustness, and accuracy of the end result determine the extent to which the MC based assessment system is being accepted as the credible means learning assessment and evaluation in the society. This research paper highlights the trend in the development, advances, and recent researches that have being made on MC grading systems. It also provides a critical review and analysis on the different models that exist, with suggestions on directions for future development and research.

Keywords: Multiple-choice; Optical Mark Reader; Answers Extraction

AIMC-2018-STEM-135

ANTIOXIDANT, ANTICONVULSANT, ANTIMICROBIAL AND ANTITYROSINASE ACTIVITIES OF ISOLATED COMPOUNDS FROM THE LEAVES OF SCURRULA PARASITICA L.

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Abstract

AbstractPhytochemical investigation of the leaves of Scurrula parasitica from Loranthaceae family parasitizing on Pongamia pinnata tree and their biological activities have been studied. Cold extractions were carried out using n-

hexane, ethyl acetate and methanol to obtain the crude extracts. Purification of the extracts led to the isolation of quercetin (1), quercitrin (2), kaempferol 3-O-a-L-rhamnoside (3), (+)-catechin (4), lupeol (5), lupeol palmitate (6), ß-sitosterol (7) squalene (8), octacosane (9) octadecane (10) and eicosane (11). The in vitro antioxidant activity of the extracts and isolated compounds were evaluated. Compounds 1, 2, 3 and 4, together with ethyl acetate and methanol extracts exhibited effective antioxidant activities against DPPH, ABTS and FRAP assays, while n-hexane and other compounds were inactive. In the in vivo anticonvulsant activity, Quercetin significantly ($P < 0.05$) increased the mean onset of spasm in the unprotected animals and differentially protected the mice against mortality. The ethyl acetate extract gave the highest tyrosinase percent inhibition value of 66.02%, while quercetin gave the best result with tyrosinase percent inhibition value of 59.09%. All extracts and compounds were evaluated for in vitro antimicrobial activity against several microorganisms, quercetin demonstrated the moderate activity against Pseudomonas aeruginosa with MIC and MBC values of 250 µg/mL. The present study has demonstrated the Antioxidant, Anticonvulsant, Antimicrobial and Antityrosinase potential of Scurrula parasitica and thus provide some logical evidence supporting the traditional uses by different ethnic groups in Asia and other parts of the world for alleviating cancer, epilepsy and skin disorders.

Keywords: Quercetin, Scurrula parasitica, Loranthaceae, anticonvulsant, antioxidant

AIMC-2018-STEM-137

A DEVELOPED COLLABORATIVE FILTERING SIMILARITY METHOD TO IMPROVE THE ACCURACY OF RECOMMENDATIONS UNDER SPARSITY DATA

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Abstract

This paper presented a new similarity method to improve the accuracy of traditional Collaborative Filtering (CF) method under sparse data issue. CF provides user with items, that what they need, based on analyses the preferences of users who have a strong correlation to him/her preference. However, the accuracy of memory-based CF is influencing by the method that used to find neighbors. Pearson correlation coefficient and Cosine similarities methods, as the most widely used methods, depending on the rating of only co-rated items to find the correlations between users. Consequently, these methods are lack of ability in addressing the sparsity. This paper presented a new developed similarity method based on the global user preference to address the sparsity issue. The novelty of this method is the ability to solve the similarity issue with a capability of finding the relationship among non-correlated users. Furthermore, to determine the right neighbors, the developed method considered two main factors while computing the similarity between a pair of users. Firstly, in order to fairness in finding the relationship, the proportion of the number of items rated by the target user to the number of items taken by both users is considered. The correlation between a pair of users will be more strong when the number of ratings for each of them is close and vice versa. Secondly, the proportion of co-rated, as an important factor, is also considered to devalue the correlation weight between a pair of users when the number of co-rated items is small. The MovieLens 100K benchmark datasets are used to evaluate the accuracy of the proposed method. The experiments’ result showed that the proposed method improved the accuracy compare to the traditional CF similarity methods using a certain common CF evaluation metrics.

Keywords: Recommendation System; Collaborative Filtering; Similarity Measure

AIMC-2018-STEM-144

DETERMINATION OF CRITICAL OVERLOAD TRANSMISSION LINE USING NOVEL MAXIMUM POWER LINE STABILITY INDEX

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UMP

Abstract

Recent years, a larger number of DG’s are being employed especially at the critical load ends to reduce the burden on the main feeder. One of the benefits of employing DG that it improves the system voltage stability even with load increment. The primary focus of this paper rests on creating a novel line voltage stability index. The line stability index approach is proposed based on Thevenin theory to gauge the DG level impact on transmission line. Transmission issues due to the overloading of lines in high DG penetration areas during the outage scenarios taking place earlier. The rationale for the proposed strategy will be experimented on a standard IEEE 30 bus test system compared with other line voltage stability indexs.

Keywords: Transmission line, stability index, Distributed generator

AIMC-2018-STEM-146

PROACTIVE RESEARCH TECHNIQUES IN PREVENTING WATER LEAK IN AIR CONDITIONING SYSTEMS AT E6, UTHM

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Abstract
Ventilation system is an important requirement and element that is essential in providing comfort to the user. However, in providing a perfect service, the maintenance committee will face various issues regarding the ventilation system, which includes the air conditioning system. Research carried out after considering reports made by students and users of the building, directed to the water leakage issue of the air conditioning system unit in the E6 building, Universiti Tun Hussien Onn Malaysia (UTHM). The main purpose of this study is (1) to review if there are side effects that can occur and if no action is taken after a leak, the causes of water leaks in air conditioning systems in E6, UTHM are identified, (2) to propose a standard operating procedure (SOP) in order to overcome the problem of water leaks in air conditioning systems in E6, UTHM and (3) to propose proactive techniques in preventing water leaks in air conditioning systems in E6, UTHM. This study used qualitative methods in data collection to optimize obtained data and produce appropriate findings at the end of the study. Data obtained from interviews with several individuals associated with the field of study, with support of the maintenance documents and report related to the study, a visual observation activity by researchers and information gathered from the reading material was very helpful in the process of research production. At the end of the study, researchers looked at the potential of developing a standard operation procedure for water leakage prevention in air conditioning systems at E6, UTHM and furthermore can be used as a reference material.

Keywords: Air Conditioning; Building Services; Maintenance

AIMC-2018-STEM-148

AWARENESS OF AND ACCESS TO ANCHOR BORROWERS' PROGRAM BY SMALL HOLDER RICE FARMERS IN WESTERN JIGAWA STATE, NIGERIA

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Abstract
Nigeria is the largest rice producing country in West Africa, but is also the second largest importer of rice in the world. Current government policy initiatives aim at prioritizing the rice sector and decreasing dependence from international imports, fostering production and supplying agricultural inputs. Faced with mounting food import bills for the staple crop that has been consuming huge chunks of forex particularly in times of low oil revenues, the government in 2015, created the Anchor Borrowers Program (ABP), a micro-credit scheme for farmers of identified crops, including rice. Jigawa State is mainly an agrarian area, and is one of the major rice producing zones in the country. A survey on awareness of and accessibility to ABP was conducted among smallholder rice farmers Kazaure Local Government Area of the state. The result of the survey indicated that a significant proportion of farmers are not aware of the scheme. Those that are aware are hampered by factors such as illiteracy, cultural barriers and bureaucratic bottle-necks. The paper recommends more awareness drives and a revision of the requirements of ABP to attract more farmers into the programme.Keywords: Anchor Borrowers Program, Smallholder Farmers

AIMC-2018-STEM-156

HOW CAN MODELLING TOOLS INFORM ENVIRONMENTAL AND CONSERVATION POLICIES?

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Abstract
Among the important environmental and ecological problems are to determine the distributions of species (e.g. endangered, native and invasive species) across geographical regions and to understand the determinant of species range limits (i.e. the boundaries of the locations in which a species is found). Various studies highlight that abiotic environments (e.g. temperature, climate) and biotic interactions (e.g. competition) can influence species distributions. To investigate this problem, two mathematical models for predicting species distributions have been proposed. Such models generally take the form of deterministic systems such as partial-differential equations, in which they aim to understand the interactions between species at the population scale. Thinking of interacting species as finite groups of agents, rather than continuous densities, may alter the structure of the modelling frameworks. This problem can be studied using stochastic individual-based models (IBM). These two models are employed to examine the outcomes of species interactions and to understand how these species are distributed in spatially changing environments. As such, comparing and contrasting the observations between the IBM and deterministic models may offer important insights in predicting species range limits and help us to develop robust predictions of species potential distributions in nature.

Keywords: Partial-differential equations; Stochastic individual-based models; Range limits of species; Environmental and conservation policies.

AIMC-2018-STEM-157

COMPARISON BETWEEN QUADRATIC DOSE PROTOCOL VERSUS WEIGHT BASED PROTOCOL FOR 18F-FDG USING PET DISCOVERY ST

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Abstract

Overweight and obese patients has been a well-known problem in PET-CT whole body procedure until today. A degradation of image quality in PET imaging is associated with the patient's body weight which leads to coincidence photon lost due to high scattering and attenuation events. For tumour imaging with PET, the literature proposes to administer a patient-specific FDG activity that depends quadratic formula on a patient's body weight. However, a practical approach on how to implement such a protocol in clinical practice was limited in Malaysia. This study aimed to apply a practical method introduced by Koopman et al to determine a FDG activity formula for whole-body PET examinations that satisfies both the EANM guidelines and this quadratic relation at Institut Kanser Negara. This study using the NEMA NU-2001 image quality phantom. This phantom was filled with 2.0 and 20.0 kBq FDG/mL in the background and spheres, respectively. After several PET acquisition from 1 min up to 10 min, a sphere recovery coefficients (RCs) was calculated and the result was found within specifications. By performing reconstructions with several scan durations, the minimal scan time per bed position (T min) was extracted using an image coefficient of variation (COV) of 15 %. At T min, the RCs should be within EARL specifications as well. We successfully made a trial on this protocol. Minimal scan time (T min) obtained was 3.7 mins and it was longer than current protocol used (2.5 mins). In terms of effective dose for adults on both quadratic and current protocol, for patient's body weight 62 kg and above, quadratic protocol began to have higher effective dose compared to current protocol. However, the amount of effective dose is lesser than current protocol for 62 kg and below.

Keywords: 18F-FDG; PET-CT

AIMC-2018-STEM-160

AN EXPLORATION OF MOBILE CLOUD COMPUTING SERVICES AND ITS APPLICATIONS FOR COMMERCIAL USERS

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Abstract

With the advancement of technology and the rapid growth in the mobile applications, Mobile cloud computing has been introduced in mobile platform to serve the needs to the users. Cloud integrated with mobile application provides the functions for building and consuming the next generation of business applications. By incorporating cloud computing in mobile will give lots of benefits for end users with lower cost. This paper first discusses the definitions of cloud computing, mobile computing and mobile cloud computing and its architectures. Then, discusses some of the mobile applications which are used in different fields such as commerce, healthcare, learning and games. Finally, deliberates the security and threats for mobile cloud computing services to the commercial users.

Keywords: Mobile device, Cloud computing, Mobile computing, Architecture, Users, Security

AIMC-2018-STEM-162

HELICES OF GENERALIZED BURGER FLUID IN CIRCULAR CYLINDER: AN ANALYTIC ANALYSIS

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Abstract

This paper is analyzed to highlight the effects of generalized Burger fluid flow for infinite helically moved cylinder. The analytical solutions are investigated for velocity and shear stress profiles by utilizing mathematical Hankel and Laplace transforms with their inversions. The expressions of analytical solutions have been established in the layout of Fox-H function. The general solutions satisfy initial and boundary conditions and reduced for limiting / particularized solutions of Burger, Oldroyd-B, Maxwell, Second grade fluids. The helical flows of four models as Burger, Oldroyd-B, Maxwell and Newtonian fluids are presented for comparisons with existing published findings exhibit good agreement and reveal the accuracy and validity of our analysis. With the help of graphs, the influence of rheological parameters such as dynamic viscosity, time, fractional parameter, material parameters, oscillations, retardation and relaxation periods are underlined for helicity of cylinder on fluid flow.

Keywords: Caputo derivatives, helical cylinder, Fox-H function, analytical solution and rheology

AIMC-2018-STEM-165

REMOVAL OF REACTIVE DYE USING RAW RAMBUTAN PEELS

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Abstract

Agricultural waste, raw rambutan peels were prepared as adsorbent for the adsorption of Reactive Red 120 dye from aqueous solution. Various parameters such as the size of adsorbent, adsorbent dosage, initial dye concentration, contact time, pH and agitation speed were studied. Optimum adsorption of reactive red 120 dye was found to be with 2.3 g of raw rambutan peels dosage (75 μm) which works best on 450 mg/L initial dye concentration in 2 hours time at pH 4 at 120 rpm of agitation speed. Mechanism of dye adsorption was evaluated by using Langmuir and Freundlich isotherm. The parameters favoured Langmuir isotherm with adsorption capacity of 11.25 mg/g with R2 of 1, which strongly indicates monolayer adsorption. The percentage removal was found at 80% and the raw rambutan peels were found to have the potential to remove the reactive red 120 dye. Keywords: Agricultural waste; raw rambutan peels; adsorption; reactive red 120 dye; isotherm studies

AIMC-2018-STEM-166

AN EVALUATION FRAMEWORK FOR SUPPORTING THE COMPUTER'S NETWORK TOPOLOGIES

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Abstract

Computer networks regardless how they connected, is a combination of devices which linked together in facilitating and supporting the knowledge sharing. Information sharing and networking are played the important role in changing the way of human life. In networking, an approach to describe the layout of the of the connected devices together is called a topology, these topologies like a star, ring, bus, mesh, tree, and hybrid. In this paper, an evaluation framework was proposed in supporting to evaluate the computer networks topologies, the comparative analysis based on the proposed framework is highlighted, and finally, a visualization of such topologies in simulation manner using network simulator NS2 was presented.

Keywords: Computer Network, Network Topologies, Network Simullation

AIMC-2018-STEM-169

A SHORT REVIEW OF GRAPHENE AS PROMISING CATALYST SUPPORT IN DIRECT METHANOL FUEL CELL

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Abstract

Direct methanol fuel cells (DMFC) has been regarded as the most promising alternative energy conversion for potential applications in various portable electronic devices due to efficient energy conversion, low working temperature, eco-friendly and low emission pollutant. However, several problems such as high platinum (Pt) catalyst cost and slow reaction kinetic due to the Pt catalyst poisoning during methanol oxidation reaction and thus reduces the performance of DMFC. In recent years, many researchers have focused on improving the performance of Pt catalyst in term of catalytic activity by introducing electrocatalyst support materials. One of the most promising electrocatalyst supports is graphene which is a relatively new carbonaceous material, displaying some advantages in term of physicochemical properties. In current studies, graphene is found to have significantly improved anode electrocatalytic performance. Therefore, this paper presents an overview of the recent advances development of graphene supported Pt catalysts for DMFC which is focuses on the preparation of graphene and graphene nanocomposite anode catalysts, their structure, electrochemical properties, electrocatalytic activity and DMFC performance.

Keywords: DMFC; graphene; nanocomposite catalyst; catalytic activity; electrochemical property\

AIMC-2018-STEM-170

SOLVING HIGHER ORDER ORBITAL PROBLEMS USING A THREE- POINT BLOCK METHOD

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Abstract

Previous numerical methods for solving systems of higher order ordinary differential equations (ODEs) directly require calculating the integration coefficients at every step. This research provides a block multi step method for solving orbital problems with periodic solutions in the form of higher order ODEs directly. The advantage of the proposed method is, it requires calculating the integration coefficients only once at the beginning of the integration is presented. The derived formulae is then validated by running simulations with known higher order orbital equations. To provide further efficiency, a relationship between integration coefficients of various order is obtained.

Keywords: ODEs; Backward Difference;

AIMC-2018-STEM-178

STUDY OF BLOOD FLOW IN NORMAL AND STENOSED RENAL ARTERY USING CFD

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Abstract
Atherosclerosis is a condition of plaque/fatty deposit on the walls of the artery resulting in obstruction to blood flow. Several researchers have studied the hemodynamic behavior on patient-specific models. The aim of present study is to investigate the hemodynamic behavior in 3D models of an idealistic abdominal aorta with renal branches based on (Computed Tomography) CT image. A new technique is used to develop the idealistic model from the single slice. Further, two more 3D models are generated by including stenosis in one renal branch and both renal branches separately. The investigation is focused on haemodynamics parameteres such as flow field, pressure and Wall Shear Stress (WSS). The flow variables are monitored throughout pulsatile flow subjected to both resting and exercise cases. The obtained results from this fundamental study agree well with the available literature and can be useful for further studies.

Keywords: ANSYS Fluent, CFD, Exercise and Resting condition, Renal Artery

AIMC-2018-STEM-185

DESIGN OF A FULLY WIRELESS INDOOR SMART ENERGY SAVING AND MONITORING SYSTEM

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Abstract
The wireless indoor smart technology has changed rapidly and improved daily living. Humans will continue to enjoy comfortable and convenient lives with the support of the latest technology. The proposed Smart Energy Saving and Monitoring System (SESMS) was designed and developed to control the operations of indoor electrical appliances, especially in offices. SESMS is wireless and fully automated, and it reduces power consumption, particularly in high power consuming sectors, such as commercial and industrial areas. SESMS includes a monitoring system that can analyze the data collected from various conditions, thereby avoiding electricity wastage. The interface of the Monitoring Control System was designed to collect data easily and to show the information clearly to users. The collected data will display clearly and automatically in Microsoft Excel. The interface of the monitoring system indicates the status of every office according to the data collected.

Keywords: Fully Automated; Monitoring System; Smart Energy Saving System; Wireless.

AIMC-2018-STEM-187

THE DEVELOPMENT OF CONDITION ASSESSMENT METHOD FOR HERITAGE BUILDING

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Abstract
This paper examines the criteria and attributes for assessing element in buildings. Using the Analytical Hierarchy Method (AHP) a survey questionnaire was developed based on the identified criteria and attributes of element for heritage buildings in Malaysia. The survey questionnaire was administered to consultant, contractor and academician. The data were analysed using Business Performance Management Singapore (BPMSG) software. The result of the research is the weightage for each criterion and its respective attributes.

Keywords: Condition assessment; heritage building; AHP

AIMC-2018-STEM-190

IMPROVEMENT OF SUSTAINABILITY BY USING RECYCLED AGGREGATES IN CONCRETE

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Abstract
Construction and demolition wastes are produced every day around world. Thus, the idea of using recycled concrete aggregate in new concrete production appears to be an effective utilization of concrete waste to improve the sustainability. Use of concrete in structures consumes millions of tons of aggregates. Since earth is source of aggregates then obtaining these amounts would have an adverse effect on the environment. Furthermore, demolishing concrete structures and dumping concrete rubbles would aggravate problem. Therefore, it becomes necessary to recycle crushed concrete and use it as coarse aggregate in new concrete mixes. Recycled aggregate properties have been determined and compared to those of natural aggregates. Except for absorption, there was not a significant difference between natural aggregate and recycled aggregate. Recycled aggregates were introduced in concrete mixes. In these mixes, natural coarse aggregate was partly or totally replaced by recycled aggregates. Results showed that use of recycled aggregates has an adverse effect on the workability of concrete. Such an effect can be easily retained by using plasticizers. Also, concrete strength has been reduced by 5% to 25% depending on percent of normal aggregate

replaced by recycled aggregate and water-cement ratio. With respect to tensile strength, recycled aggregate concrete was slightly lower. The cost reduces 2.5% of total research cost by use of recycled aggregates. Although recycled aggregates can be used in a variety of road construction applications, product variability and strength characteristics usually limit their use to road base, backfill, and asphalt pavement. Quality of products containing recycled material is often source dependent, and indiscriminate blending may lead to inferior performance. Careful feed monitoring, testing, and marketing can broaden the use of recycled aggregates into other applications.

Keywords: Concrete, Recycled Aggregates, Strength of Concrete, Sustainability and Life Cycle cost.

AIMC-2018-STEM-191

IMPROVEMENT OF SUSTAINABILITY IN CONSTRUCTION THROUGH ENERGY EFFICIENT BUILDINGS.

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Abstract

Pakistan is facing an immense energy crisis and demand of energy is increasing day by day. The sustainable solution for this energy demand is to conserve energy and produce its smaller portions from non-renewable sources and the remaining from renewable sources since Pakistan has more than 300 full light days, wind and a treasure of water sources. Buildings are the prime consumer of energy and there lies a capacity in buildings to conserve energy if designed intelligently. The buildings can be smartly designed to take maximum advantage of natural sources for lighting, heating and cooling purposes inside the building while minimizing the electricity use. The purpose of this paper is to highlight the importance of energy efficient buildings for a better, economical and energy saving sustainable construction. A case study of textile mill is discussed where energy efficient system was installed resulting in a reduced electricity consumption by more than 35%. The investment on transforming a conventional building to an energy efficient building returns in the form of lesser electricity bills and healthier production.

Keywords: Energy Efficient Building, Sustainable Construction, Energy Crisis, Passive Design

AIMC-2018-STEM-192

IMPROVEMENT OF ENVIRONMENTAL SUSTAINABILITY BY USING INDUSTRIAL WASTE WATER IN CONCRETE

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Abstract

Concrete is heterogeneous mixture of cement, sand, crush and water in specific proportion. The strength of concrete highly depends upon the strength and properties of its ingredients. Better the quality of all ingredients in concrete more will be strength of concrete and vice versa. Mainly strength of concrete depends of the quantity and quality of mixing water as well as aggregates. The quality and quantity of water matters a lot in the strength of concrete. If greater amount water will add in concrete mixture then it will produce lot of voids in concrete and reduce the strength of concrete. Similarly, the strength of concrete effects by quality of water. Better quality of water will improve strength of concrete and poor quality of water will reduce the strength of concrete. It is good to use drinkable water in the mixing of concrete. The impurities present in mixing water will not allow the hydration reaction to proceed effectively and hence reduce the strength of concrete. Five different quality of mixing water were used in this research to investigate their effect on compressive strength of concrete that included tab water, distilled water, canal water, sea water and industrial water. Industrial waste water produces the disaster effects on environment and need to be treated and reuse to reduce its environmental effects. The samples were made by using these qualities of water and then tested in compression testing machine after specific period of time. The compressive of all these samples were compared. The compressive strength of industrial waste water came out to be maximum due to presence of chemical in it that promote the hydration reaction in concrete. So, it is recommended that construction stakeholders should use the industrial waste water in concrete to reduce its environmental effect and to protect the nature.

Keywords: Quality of water, Compressive Strength of Concrete, Effect on environment, Sustainability.

AIMC-2018-STEM-193

COMPARISON OF PERFORMANCE OF REINFORCED CONCRETE BUILDINGS AND BRICK MASONRY BUILDINGS IN MUZAFFARABAD DURING 8TH OCTOBER 2005 EARTHQUAKE IN PAKISTAN

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Abstract

On October 8, 2005 at 08:52PST an earthquake of 7.6 Richter scale struck mountainous areas of Pakistan including Narran Valley, Neelam Valley, Jhelum Valley Mansehra, Muzaffarabad, Battal, Allai, Garhi Habib Ullah, Balakot, Bagh, and also Islamabad and Lahore. The epicenter of the earthquake was located near Muzaffarabad. As per the official figures, about 75000 people were dead, 70000 people were injured and 2.6 million families had been displaced. The most destructive and severe damage was observed in Muzaffarabad, Bagh, allai and Balakot areas where the entire

villages and towns were ruined. In Muzaffarabad buildings were mostly constructed by local traditional stones, brick masonry and block and obviously not properly designed to resist such a high earthquake. The major effects of earthquake have been seen in brick masonry buildings most probably due to the meager construction of the load bearing walls. Few reinforced buildings (properly designed) existing in these areas suffered lesser damage as compared to the brick masonry buildings. Distance from the fault surface governs the level of failure in buildings. The villages adjacent to the rupture zone was completely destroyed during this earthquake and those which laid over full intensity of earthquake observed negligible vertical and shear motions. This paper attempts to evaluate the difference in performance of local brick masonry buildings and reinforced buildings and the material used in the construction of buildings in the affected areas particularly Muzaffarabad. It is found that some of the reinforced buildings and brick masonry buildings had much earthquake resistance such as corner reinforcements and lintel bands. This paper will discourse cracking and damages in wrecked buildings of the affected areas and the recommendations for the future construction will also be given to educate the community to adopt the proper and suitable type of structure that will resist the high value of earthquake.

Keywords: Earthquake, Seismic activity, reinforced and brick masonry structures, structural damages, failure and crack pattern.

AIMC-2018-STEM-194

INTEGRATED APPROACH TO SOFTWARE BASED RISK ASSESSMENT AND MANAGEMENT OF DASU HYDRO-POWER PROJECT

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Abstract

In the present global economic recession context, many governments throughout the world especially developing countries are now seeking to attract private financing due to their limited resources constraints. The main deviation between Public & Private perception is treatment of risks. Public entities rarely bother about risks whereas Private investors focus on risks. In addition to this there might be land ownership and water right problems. Uncertainties, is the lack of sureness about an outcome or quantity which creates risks. In Hydropower Project like Dasu uncertainties surrounds uncertain about water flow rate, estimated project costs, future annual costs, escalation rate and future value of energy. Since these quantities are not known with certain, which results unfavorable outcome to the project stakeholders are possible. These risks should be analyzed and minimized to the feasible extent. Various methods are available to analyze uncertainties in the energy related investment. However, two are most popular and highly use in practice means the Sensitivity & Risk Analyses.

Keywords: HPP, PMI, Hydro-power Project, Risk Assessment, Analysis and Risk Management

AIMC-2018-STEM-195

IMPACT OF CHINA PAKISTAN ECONOMIC CORRIDOR (CPEC) ON SUPPLY AND DEMAND OF CONSTRUCTION MATERIALS

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Abstract

China-Pakistan Economic Corridor (CPEC) is a $46 to $57 billion project that includes around 3,000 km long trade route from Pakistan’s Gwadar Port to Kashgar city in northwestern China’s Xinjiang Uygur, autonomous region. The route is comprised of a raft of mega construction and infrastructure projects set to be completed by 2030. Once fully completed, the route will provide China with rapid access to the Middle Eastern, African and Central Asian markets. The objective of this study is to examine increase in price of construction materials by the year 2027 using the data compiled from the database of several Pakistani contractors. Experts have also been interviewed to get real-time data of CPEC impact on supply and demand of construction material. This study can be useful for manufacturing industry and construction stakeholders as they can develop a strategy to cope with the demand of these materials and produce more in order to balance the demand. The materials for which the price is expected to rise more than 30% by the year 2027 are tile work, crush, granite, backfilling and wood which are used in construction of houses, buildings and structures. It thus indicates the price of construction materials are likely to increase significantly, so the government needs a strict mechanism to control the prices. Also, we need to build new construction industries so as the gap in demand of materials could be fulfilled.

Keywords: Supply Demand, CPEC, Price Escalation, Supply Chain Management

AIMC-2018-STEM-196

ANALYZING THE STRENGTH PROPERTIES OF HIGH STRENGTH CONCRETE

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Abstract

Concrete being the most widely used material in civil engineering for infrastructural development. The improvement and further development of this material has always been on tips of civil engineers in their research projects. It has now

been recognized that concrete with many of its newer combinations and additives in the form of cement based composites has improved its properties. High Strength concrete represents a recent development in the advancement of concrete materials technology. Now, it is established that high Strength concrete is of high quality and lower cost. High Strength concrete is not a commodity but a range of products, each especially designed to satisfy in the most effective way the Strength requirements for the intended application. High Strength concrete mixtures contain, higher cement content, lower w/c ratios, strong aggregates, cementitious materials like silica fume and high range water reducers. Such mixtures, when properly mixed, placed, consolidated and cured yield very high strength and excellent Strength. For this research the effects of different replacement levels of cement by silica fume (5%, 10% & 15%), incorporating the coarse aggregates from two major sources Sargodha and Margala were studied. All the mixtures were prepared with constant w/c ratio 0.25. Strength properties including compressive, tensile, flexure and modulus of elasticity were analyzed. Optimum replacement level of cement by silica fume that satisfied the economic Strength in terms of all the strength properties is identified. Potential applications in high-rise buildings, long span bridges and off-shore structures are suggested. Finally, the research is concluded with further future prospects.
Keywords: Concrete, High Strength Concrete, Properties of Concrete,

AIMC-2018-STEM-197

IMPLEMENTING THE INTEGRATED MANAGEMENT SYSTEM FOR CONSTRUCTION INDUSTRY OF PAKISTAN

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Abstract

The subject of Integrated Management Systems in terms of quality, environmental and occupational health and safety management has become of increasing interest to researchers and business alike during the last many years or so. This research was based on a review of the various models of integration found in the academic literature and used the Pakistan construction industry as a case study, to investigate the implementation of IMS and interrelationship between corporate culture and the IMSs. The research shows that there are very few organizations who have integrated their management systems and few are planning to integrate. It also depends on the size of organization. Smaller organization do not have IMS and not they are willing to integrate their system. They only prefer quality of work. It has also been noted in this research that only large organizations give training to their staff related to environmental issues while medium to small organizations only focus on safety training. Respondents have shown harmony about the requirement of cultural change for integration of management systems.
Keywords: Construction industry, Management System, IMS, Improvement of construction management

AIMC-2018-STEM-198

CAUSES OF DELAY IN CONSTRUCTION AND REHABILITATION PROJECTS OF BARRAGES IN PAKISTAN

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Abstract

Construction delay is a global phenomenon faced by many construction industries for this reason the magnitude of risk and unpredictability is very high in the building industries compared to other industries. However, the problem of construction delays is a recurring issue in civil engineering practice. This occurs often in the entire project life span leading to conflict and legal proceeding. The successful completion of activities and retaining them in the roughly calculated cost and time plan rely on upon a strategy that involves good professional discernment to the aversion of client, contractors and consultants. The objective of this study is to determine the causes of delays in the completion of barrage construction projects in Pakistan and find solutions to this problem. Quantitative method was chosen in this study because it is a social research that utilize empirical process and empirical accounts. The questions were very straight and simple to understand such that respondent is meant to tick the correct box that best describe they roles or personal interest. Section B covered the causes of construction delay such that the question was designed on a Likert scale to see the occurrence and severity of particular delay causing events in construction of Barrages in Pakistan. The overall result shows that most important of the causes of delay in the barrage construction projects in Punjab originate from financial and poor resources management (technical, human, and materials). In order to minimize these causes, owners should have an available fund for project and pay in time to the contractors according to the agreement. On the other hand, contractors should have strong backing from financial institution and be financially sound.The cost of individual construction projects needs to be accurately estimated and any potential project risks that can lead to cost and time overruns are to be adequately identified and managed accordingly. Moreover, human resources should have good training in managerial and technical aspects of the construction projects. These programs can update participants to have good practice in planning coordinating, controlling and monitoring of resources in scheduled time.
Keywords: Construction industry, Disputes, Causes of Disputes, Barages Construction

AIMC-2018-STEM-199

CAUSES OF DISPUTES IN CONSTRUCTION AND REHABILITATION PROJECTS OF BARRAGES IN PUNJAB

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Abstract

Construction projects are increasingly complex, resulting in complex contract documents. Complex construction can likewise result in complex disputes. Dispute is inevitable in construction projects which predominantly arise from complexity and magnitude of works, multiple prime contracting parties, poorly prepared and /or executed contract documents, inadequate planning, financial issues and communication problems. Any one of these factors can overturn a project and lead to complicated litigation and arbitration, increased costs, time overrun, and a breakdown in the parties’ interest and relationship. Thus, the objectives of this study are to study and identify the causes of construction dispute in construction and rehabilitation projects of barrages in Pakistan. This research also reviews the causes of dispute contributed by clients, designers and contractors in construction project and suggestion on how to minimize or avoid the occurrences of construction dispute. The study is based on questionnaire survey by which expert opinion about certain preselected factors from literature review and pilot survey, that may affect the occurrence of disputes. The survey was carried out in the Punjab and the feedbacks were analyzed using important index (Likert Scale) and average index analysis. The results show that people, process, and project all contribute to such dispute potential. The highly ranked factors which cause disputes in barrage construction are Lack of relevant quality experience of the designer, Inadequate time for design, Delayed issuance of IFC drawings, Unclear risk allocation, Using lower bid system and Lack of relevant quality experience of specifications writer. It is recommended that construction clients allow sufficient time for the design phase, so the designers are able to produce a comprehensive design in order to minimize changes during the construction phase. Contractors also need enough time to study the tender documents and project requirements, so they can produce as complete bids as possible. Contractors, on the other hand, are recommended to use their own experience to assess project requirements before submitting bids, to avoid taking on projects that are beyond their level of experience. Furthermore, practicing professional ethics is always beneficial; therefore, it is strongly recommended that purposeful underpricing be avoided due to the negative consequences that follow. Moreover, contractors are recommended to familiarize themselves with the different conditions of the contracts, so they are able to follow their procedures, for example, for claim submittals.

Keywords: Construction industry, Disputes, Causes of Disputes, Barages Construction

AIMC-2018-STEM-203

INFERENCE NEW KNOWLEDGE USING SPARQL CONSTRUCT QUERY

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Abstract

SPARQL Protocol and RDF Query Language (SPARQL) is the query language which extracts and manipulate data stored in RDF datasets. SPARQL is W3C recommendation and allow users to get what they need rather than how a database is organized. SELECT query is most popular and widely used SPARQL query which gets required piece of information from RDF dataset, however, the topic of this paper is SPARQL Construct query which returns an RDF graph rather than returning of a table of result values. SELECT query only fetches data which are already stored in datasets and does not infer new knowledge. In our work, we used SPARQL CONSTRUCT query to show how new information can be inferred based on the already existed data stored in our ontology, which otherwise can be possible using Semantic Web rules.

AIMC-2018-STEM-205

SWITCHABLE DUAL-WAVELENGTH, PASSIVELY Q-SWITCHED THULIUM-DOPED FIBER LASER USING PHOTONIC CRYSTAL FIBER

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Abstract

In this paper, a switchable dual-wavelength Q-switched thulium-doped fiber laser is demonstrated. Silver-nanoparticles film is used as the saturable absorber, while the dual-wavelength mechanism is achieved through the use of a PCF. The dual-wavelength Q-switched laser produced consistent outputs at 1026.26 nm and 1028.74 nm with a narrow wavelength spacing of only 2.74 nm. The repetition rate of the pulses obtained covers a range from 27.94 kHz to 55.82 kHz with an increasing pump power of 175.97 mW until 271.09 mW. The narrowest pulse width obtained is 4.08 µs and a pulse energy as high as 39.43 nJ is generated. The dual-wavelength laser is stable when tested for its long-term stability and the setup provides a simple design for a dual-wavelength Q-switched fiber laser.

Keywords: Q-switching; Thulium; Dual-wavelength; silver

AIMC-2018-STEM-215

CONCRETE QUALITY TESTING THE PREFABRICATED FOUNDATION OF THE TRAPEZOIDAL MODEL

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Abstract
The foundation made of the stone material is widely used in the construction of houses in Indonesia. The need and limitations of stone materials as the basic ingredients of foundation building need innovative thinking of its development. This study aims to develop a substitute foundation made of stone with the foundation of precast concrete. Precast concrete foundation model developed with varied models. The methodology is to make varied models of trapezoidal precast foundation with the inside of the perforated part. The precast foundation model is very easy to do and practical. The conclusions show that the precast foundation is capable of accepting the expected and feasible loads used for house building foundations.

Keywords: houses; precast foundation; varied model; concrete; feasible

AIMC-2018-STEM-216

DYNAMIC VOLTAGE RESTORER USING DQ0 AND FUZZY LOGIC CONTROLLER IN MEDIUM LEVEL DISTRIBUTION SYSTEM

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Abstract
Higher penetration of nonlinear devices installed in the power system at various levels is introducing complexities and power quality issues. Dynamic Voltage Restorer (DVR) is a custom power device that is used in modern times as a voltage stabilizer. This study uses the DVR, based on DQ0 based compensation scheme (in medium level voltage distribution system) where it protects the 11KV distribution network and the subsequent sensitive devices connected at low voltage network. The controller protects the devices from voltage sag caused by diverse types of faults in the power system. Application of DVR in medium and high voltage distribution network is limited by the requirement for large capacity energy storage for DVR. In this study, a DC low voltage source of only 200 V is utilized with the help of a step-up injection transformer. Both DQ0 based DVR & Fuzzy Logic Controller (FLC) based DVR are modeled and simulated in a test system in MATLAB/ Simulink environment that ensures the effectiveness and reliability during power systems faults causing voltage sags. FLC based DVR performed more effectively in compensating Voltage sags and caused less harmonic distortion in the system. Modeling of the two DVRs and the test system are described in detail in this study

Keywords: Parks transformation; Fuzzy logic; Power Quality; Dynamic Voltage Restorer,;medium level distribution system

AIMC-2018-STEM-218

COMPARATIVE ANALYSIS OF GAMMA EMISSIONS FROM TILES PRODUCED IN NIGERIA AND FOREIGN COUNTRIES AND ITS HEALTH RISK ON INHABITANTS

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Abstract
Gamma emission from ceramic tiles produced in Nigeria and foreign countries were analyzed using High purity germanium gamma spectroscopy. The associated lifetime cancer risks were also determined. The mean values for the activity concentrations of 226Ra, 232Th and 40K were found to be 45.7 ± 0.6, 65.9 ± 9 and 487.3 ± 15 Bqkg-1, respectively. The mean annual effective dose of 0.399 mSvy-1 found in the samples is higher than the world average dose level of of 0.7 mSvy-1. The mean gamma and alpha index from the measured samples are 0.64 and 0.27 respectively. The higher values for activity utilization index (AUI) do not satisfy the AUI < 2 recommended value, which corresponded to the annual effective dose of less than 0.3 mSvy-1. Significantly, it is noted that the mean value for excess lifetime cancer risks (ELCR) of 2.34 is distinctly higher the recommended world average of 0.29 x 10-3 which may poses risks on dwellers

Keywords: Building materials, Radionuclides, Annual Effective Dose

AIMC-2018-STEM-219

ASCERTAINING THE SIGNATURE OF RADIONUCLIDE CONCENTRATIONS IN BUILDING MATERIALS AND THEIR ASSOCIATED RADIOLOGICAL HEALTH RISKS

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Abstract

Building materials of different brands were assessed for the signatures of 226Ra, 232Th and 40K using High-Purity Germanium Gamma detector. The mean activity concentrations in the samples ranged from 27 ± 9.5 to 76.5 ± 2.5 Bqkg-1 for 226Ra, 41 ± 4 to 96 ± 8.3 Bqkg-1 for 232Th and 140 ± 7.9 to 940 ± 19.2 Bqkg-1 for 40K respectively. The Radium equivalent (Raeq) activity from the samples were < 370 Bqkg-1 as the recommended dose limiting safe value for bulk media as presumed. The dose rate of 123 nGyh-1 noted in Virony tile sample is higher than the weighted population world average of 80 nGyh-1 by 15.3 %. The annual effective dose (AEDR) obtained falls below the maximum dose limit of 1 mSv recommended by UNSCEAR, 2000.
Keywords: Building materials, annual effective dose, radium equivalent, radiological risk, gamma spectrometry, SPSS

AIMC-2018-STEM-220

INTEGRATION OF RESISTIVITY AND RADIOMETRIC METHODS FOR SOIL AND BACKGROUND RISK ASSESSMENT IN FAITH ACADEMY SCHOOL, CANAANLAND, OTA, OGUN STATE.

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Abstract

Determination of the natural radioactivity was carried out using a gamma-ray spectrometer device (Super Spec R125) on various locations at Faith Academy Secondary School, Canaanland, Ota, Ogun State. It becomes necessary to study the natural radioactivity levels in soil to assess the dose exposure to the students and its potential risk The activity concentrations of 228U, 232Th and 40K in the soil ranged from 9.88 to 35.815, from 45.066 to 128.702 and from 31.3 to 453.85 Bq kg−1, respectively. The absorbed dose rate, annual effective dose rate, outdoor cancer fertile risk, hazard quotient and hazard indices (Hex and Hin), which resulted from the natural radionuclides in the soil were calculated.

AIMC-2018-STEM-221

ASSESSMENT OF RADIOLOGICAL HAZARD IN THE SOIL AROUND HIGH SCHOOL USING RESISTIVITY AND RADIOMETRIC METHOD

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Abstract

There has been great concern about the health risks associated with exposure to natural radioactivity present in the soil. Thus, in this work, the natural radioactivity contents in surface soil in high school located in Ota, Ogun state Nigeria was assessed for background check of radiation exposure to the students. The analysis was carried out by means of gamma ray spectrometer and also electrical resistivity measurement using the Wenner configuration to determine the soil type that may pose health risk. The radioisotopes identified in the samples of the materials include those of the series headed by 238U and 232Th as well as the singly occurring isotope 40K. The mean activity concentrations of these radionuclide were found to be 24.567, 62.5799, 183.689 Bq/kg for 238U, 232Th and 40K respectively. The external absorbed dose rate, annual effective dose equivalent and the external hazard index were determined from the measured activity concentration of the radionuclide respectively. The results obtained are lesser than the International Recommended value and thus, may not pose a threat to individuals in that area.
Keywords: Background Radiation, Health Risk, Students

AIMC-2018-STEM-226

EFFLUENTS OF HAYATABAD INDUSTRIAL ESTATE AND THEIR POTENTIAL IMPACTS ON HUMAN HEALTH AND ENVIRONMENT

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Abstract

Water is a gift of Allah, which is used by human beings for various purposes. It can adversely affect the human health when polluted by certain means. There are many sources of water pollution, in which Industrial pollution is the major source and concern for today’s world. The toxic substances and chemicals used as a raw material in these industries being discharged into water bodies untreated and has wreak havoc on the human health and environment. The Hayatabad Industrial Estate (HIE) is no exception, where different industries are indiscriminately releasing their untreated effluents to the open stream nearby, which ultimately makes its way into the River Kabul while passing through urban and rural areas of district Peshawar, a thickly populated city of Pakistan. This study was initiated to evaluate the industrial effluents characteristics at the individual industry level as well as from a common point where all the industrial effluents meet with each other. The parameters such as total suspended solids (TSS), chemical oxygen demand (COD), biological oxygen demand (BOD) and total dissolved solids (TDS) were beyond the permissible limits of National Environmental Quality Standards (NEQS), which results in various fatal diseases and environmental degradation. Since it is strenuous for each industry to initiate treatment arrangement at the individual industry level, so the present study propounds that government should establish the Combined Effluents Treatment Plant (CETP) and recover their operational and maintenance cost from each industry on the basis of their BOD load per Kg.
Keywords: Human health; Effluents; Environmental degradation and CETP

AIMC-2018-STEM-233

SYSTEMATIC MAPPING STUDY PROTOCOL FOR SECURE SOFTWARE ENGINEERING

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Abstract

In today's world, software security has become essential for protecting the overall organization's operations. Mostly software development companies are adopting various strategies to build secure software to cope with the challenges of the client organization. Information become threatened due to connection with the cyber world, and it requires better security mechanisms. Software development organizations are receiving pressure from their clients to focus on the enhancement of security during the whole software development life cycle (SDLC). This protocol aims to review the literature in a systematic way to identify the state-of-the-art of software security to be considered by vendor organizations during the development of a secure software as it evolves from requirements engineering to its final disposal. In order to improve security processes in the context of software development, our current research developed a Systematic Mapping Study (SMS) protocol. Presently, we are in the implementation phase of the protocol for the development of secure software. The expected outcomes of this SMS will be a list of security measurements and their solutions to be incorporated by vendor organizations in each phase of the SDLC. This will also give a direction for new research in this area.

Keywords: Software Security; Secure Software; SDLC; Systematic Mapping Study; Vendors

AIMC-2018-STEM-240

VARIOUS SCENARIOS PREDICTION OF CONTRAFLOW OPERATION UNDER HETEROGENEOUS TRAFFIC CONDITION BY USING VISSIM MICROSCOPIC SIMULATION

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Abstract

Prior studies showed that most evacuation contraflow designs have never been implemented. As a result, the effectiveness of these contraflow designs remains unknown. In the meantime, Emergency Evacuation Time (EET) represents an essential factor for the contraflow operation process due to saving time in delay for expected evacuation. In this paper, VISSIM simulation has been used to achieve the possibility for predicting various scenarios at Kajang-Cheras highway contralane in order to establish best contraflow design operation. VISSIM’s Method of Effectiveness (MOE) (capacity, travel time, vehicles speed, delay time, density, and move time over total ratio (M/T ration)) parameters have been analyzed first to assess the performance level of Contraflow operation. Contraflow lane problems remain challenging for optimizing the best evacuation design system since the heterogeneous characteristics and no lane discipline domain on this highway at peak-hour. However, Contraflow freeway evacuation plan has been shown to be a successful remedy method to rapidly and efficiently move large numbers of vehicles during emergency situations.

Keywords: Contraflow operation; heterogeneous traffic; no lane discipline; VISSIM; microscopic simulation

AIMC-2018-STEM-241

A SECURITY MODEL FOR SAAS IN CLOUD COMPUTING

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Abstract

Cloud computing is the future of tomorrow’s personal and corporate connectivity. But every flower comes with some thorns too and the same has happened with cloud computing. Having three structural levels like Software as a Service (SaaS), Infrastructure as a Service (IaaS) and Platform as a Service (PaaS), cloud computing allows a person or company to put its data on internet so its subscribers can access that data from anywhere around the world through on demand service or pay as you go. Most of the end users are just have interaction with SaaS because other two structural layers are normally confronted with developers or cloud providers. Through SaaS consumers can use all software and applications located at a cloud without being installing them by just having access from public, private or hybrid cloud. This SaaS layer has been encountered from many security threats too due to its vulnerability as the cloud computing is still in evolving stage. These problems can distance the users of cloud computing from its very beginning. So this study has aimed to develop a theoretical security model for SaaS based on its existing control parameters. For this purpose, a qualitative research has been conducted in which a detailed systematic review has provided this study five major problems named as immature identity management, unknown data bases, vulnerable access points, poor end user secrecy and weak cloud standards which were further grouped in three broader classes named as data security threats, application security threats and deployment security threats. Four existing control mechanisms named as deterrent, preventive, detective and corrective controls have been analyzed and their gaps have been highlighted. Furthermore, additional features or functions have been added in these controls to overcome those five threats and a model has presented for this. This study has both practical and theoretical implications which can help this domain.

Keywords: Saas; Paas; Aaas; Cloud computing

AIMC-2018-STEM-243

CORROSION PERFORMANCE AND MORPHOLOGY CHARACTERIZATIONS OF SILICON CARBIDE NANO-COMPOSITE COATING ON DIFFERENT METALS BY MAGNETRON SPUTERRING TECHNIQUE

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Abstract

Silicon carbide (SiC) films were deposited on stainless steel (SS), mild steel (MS) and aluminium (Al) from a SiC targeted in a magnetron sputtering system to produce the amorphous SiC coating. Magnetron sputtering is a Physical Vapour Deposition process for deposited material onto substrate by ejecting atom from such SiC and condensing the ejected atom onto SS, MS and Al metals in high vacuum environment. The behaviour of the films as corrosion protection barriers in different concentrations of sodium chloride (NaCl) solution in 0.5 M and 1.0 M at different temperatures (30oC and 50oC) were evaluated by electrochemical impedance spectroscopy (EIS) measurements. Films on SS exhibited a better corrosion resistance than MS and Al. The weight loss measurement, it shows that uncoated metals loss more weight than coated metals for longer time of immersion. Meanwhile the EIS results also depicted that the polarization resistance, (Rp) coated metals indicates higher value compared to uncoated metals. The water salinity and temperatures also showed a significant effect on polarization resistance, (Rp) for both coated and uncoated metals. The Rp are decreased with the increased of salinity and temperature accordingly. X-ray diffraction (XRD) used for determination of phase identification. Based on XRD, there are no higher peaks were obtained on SiC, and showed that SiC were confirmed amorphous. FTIR spectroscopy used to analyse the type of bonding and particularly confirms the existence of Si-C bonding by comparing them with standard reference sample. The existence of Si-C bonding was confirmed existence on all types of samples and it was slightly shifted around 722 cm-1 and 817cm-1 of wave number. Surface morphology of SiC coatings were observed and types of corrosion was detected by using Scanning Electron Microscopy (SEM) after immersion test was conducted.It concluded that this study shows corrosion rate of coated metals was decreased obviously compared to uncoated metals and SiC nano-composite coating performed a significant corrosion behaviours and resistance parameter on different metals.

Keywords: Silicon Carbide; Magnetron Sputtering; Nano-composite Coating; Morphology characterization; Corrosion.

AIMC-2018-STEM-248

AN INTEGRATION FRAMEWORK OF COMPUTATIONAL THINKING WITH TRIZ FOR STEM PROBLEM SOLVING PROCESS

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Abstract

The movement to adopt STEM is slow, especially among developing countries. The most critical factors that limits to progression is the low readiness in applying knowledge and skills through STEM problem solving activities. Most of STEM drivers are struggling to apply their problem-solving ability in creating higher value for the student. One of the best approaches to solved problem that relates to computer application is computational thinking. However, the applications of computation in problem solving have some challenges that need to be supported by other problem-solving methodology for more structured and systematic process. This study proposed TRIZ systematic innovation methodology to be integrated with computational thinking framework (decomposed, pattern matching, abstraction and algorithm) as multi-disciplinary problem-solving skills for student in education. The TRIZ tools that are used to support the proposed integration framework are main parameter value, function analysis, trends of engineering system evolution, inventive principles, standard of inventive solutions and ARIZ. The aim of adopting the proposed integration framework is to increase the competency of student in solving ambiguous, complex, open problem, which is similar to the real-world situation of problem solving. The proposed framework is expected to support radical changes in Malaysia educational system in making computational thinking easy to be adopted by the schools, teachers and students all over Malaysia. Computational Thinking and TRIZ has been introduced into the new Standard Based Curriculum for Primary (KSSR) and Standard Based Curriculum for Secondary (KSSM) as a part of the agenda spearheaded by the Ministry of Education Malaysia (MoE) and supported by MDEC. This integration will benefit an estimated 1.2 million students from 10,173 schools nationwide starting in 2018. The impact of adopting the proposed framework will enhance the ability in creating the next generation of STEM innovator and contribute to Malaysia digital economy.

Keywords: Computational thinking; TRIZ; STEM; Education; Problem solving

AIMC-2018-STEM-253

THE MODELLING OF DNA SPLICING SYSTEMS WITH TWO NON-PALINDROMIC RESTRICTION ENZYMES

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Abstract

DNA splicing system is mathematically modelled by the process of recombinant DNA which focuses on the possible reaction of sets of restriction enzymes and a ligase. The restriction enzymes are known as endodeoxyribonucleases that

allow DNA molecules to be cut and reassociated. The cutting point of a restriction enzyme is determined by its cleavage pattern in the formation of a triple: left context, crossing and right context. The molecules resulting from DNA splicing systems are depicted as splicing languages. A palindrome is a sequence of strings that reads the same forward and backward. Researches on splicing languages in DNA splicing system involving palindromic sequences of restriction enzymes have been done previously. In this research, the splicing languages generated from DNA splicing systems with two non-palindromic restriction enzymes are generalised using Head’s splicing model. The generalisations of splicing languages for DNA splicing systems involving two non-palindromic restriction enzymes with same and different crossings are given as theorems, which are proved by induction and direct methods respectively. From the theorems, the resulting molecules from DNA splicing systems are determined without actual lab experiments. The contributions from the results of this research lead to the development of ideas in splicing systems as well as for the revolution of recombinant DNA technologies.
Keywords: DNA;splicing system;splicing language;non-palindromic;restriction enzyme

AIMC-2018-STEM-254

DESIGN AND DEVELOPMENT OF UNMANNED REMOTE CONTROLLED ROBOT FOR ARMY SECURITY

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Abstract
Abstract - The project deals with design and fabrication of implementation of a prototype teleported unmanned guided vehicle (UARV) for security applications. The designed UARV was remotely controlled using high speed secure wireless connection. With developed the step climbing mechanism. The vehicle was provided with video cameras and controlled pan and tilt motion. The live video was transmitted to an operator in the command and control station who controls steering acceleration, to control smart phone application software with the using a joystick. etc.
Keywords: UARV, Tilt motion.

AIMC-2018-STEM-259

GENERATION OF MULTI-WAVELENGTH ERBIUM-DOPED FIBER LASER BASED ON MULTIMODE INTERFEROMETER

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Abstract
A multi-wavelength erbium-doped fiber laser based on multimode interferometer is proposed and demonstrated. The erbium-doped fiber laser cavity employs a 2 m length of two-mode fiber to induce interference to generate multi-wavelength output. The suppression of mode-competition and the overall stability of the multi-wavelength is further enhanced by exploiting four-wave mixing. A stable multiwavelength is allowed with a wavelength spacing of ~1 nm. At 280.5 mW input pump power, five wavelengths are generated with an output power of 2.6 mW. The proposed multi-wavelength erbium-doped fiber laser also exhibits great stability in one-hour operation with power fluctuation of less than 1 dB. The proposed multi-wavelength erbium-doped fiber laser has significant potential for use as a laser source in instrument testing, sensing and wavelength-division-multiplexing systems.
Keywords: Multi-wavelength; Multimode Interferometer; Erbium-doped fiber laser.

AIMC-2018-STEM-268

NARROW LINEWIDTH, STABLE AND TUNABLE SINGLE/MULTIWAVELENGTH ERBIUM-DOPED FIBER RING LASER USING DIFFERENT SELECTIVE ELEMENTS

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Abstract
Ultra-high network capacity, the ability to tune and narrow linewidth source become widely demand seeks for increase transmission capacity. A wavelength selective element within the cavity usually used to reduce the bandwidth, giving the outcome of significantly narrow linewidth. Hence, narrow linewidth, stable and tunable single-line laser source is demonstrated and experimentally performed by using different selective elements. The single spectral line laser is achieved by selecting and amplifying one spectral comb line by using the tunable-bandpass filter (TBF), arrayed waveguide grating (AWG) and ultra-narrow bandwidth tunable filter (UNB-tunable filter). Erbium-doped fiber amplifier (EDFA) was used as the predominant gain medium. The UNB-tunable filter produced the widest tuning capability of 37.7 nm, which covered the C-band region. The narrowest 3 dB linewidth obtained by using an UNB-tunable filter is 14 pm.
Keywords: Fiber laser; narrow linewidth operation; multiwavelength fiber laser, ultra-narrow tunable filter;

AIMC-2018-STEM-271

ELECTROENCEPHALOGRAPH (EEG) STUDY OF MENTAL FATIGUE IN LEARNING THE PHYSICS AT SENIOR HIGH SCHOOL'S STUDENTS

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Abstract

The result of national examination in Senior High School students of Indonesia fluctuated for the last 3 years particularly in Yogyakarta. This examination is one of the national indicators for the achievement in the knowledge comprehension among the student on a certain subjects. Physics is a subject tested producing digression on the average score for last 3 years; 2015-2017. Some factors that contributes are learning process method, environment, subject, teacher, and student’s cognitive manner. However, latest factor has a high effect on accomplishing a success. The objective of this study is to investigate the mental fatigue of students in taking a part of teaching-learning process of Physics by analyzing the brain activity at cognitive system in 4 sessions. It is the combination of learning method (autodidact and non-autodidact) and condition (late morning and afternoon). An experimental study was conducted at laboratory to record beta, alpha and theta wave of brain’s produced by electroencephalograph (EEG). Four students of Senior High School were participated in this study to attend a learning process of Physics for 90 minutes in each session. Non-parametric statistical analysis was done to test the hypothesis. The result of this study showed that the autodidact learning method in the late morning for 54.25 minutes had a better performance in learning the Physic subject.

Keywords: electroencephalograph; mental fatigue; student; senior high school; Physics

AIMC-2018-STEM-272

PREDICTION PM10 CONCENTRATION USING VAR TIME SERIES

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Abstract

This paper presented a case study from Kangar monitoring station using monthly average data (1999-2015). The objective of this study is to predict the PM10 concentration by using the VAR time series model. This model was adapted to quantify and understand the interaction of PM10 concentration and meteorological parameters for air quality control using (temperature, wind speed, and relative humidity) as independent parameters and particulate matter (PM10) as a dependent parameter. The performance indicator results were (R2 = 0.887), (IA = 0.954), (PA=0.966), and (NAE=0.087) respectively. This study showed that VAR time series model was a good model to predict PM10 concentration since the results obtained closer to the performance criteria.

Keywords: PM10; Prediction; VAR time series

AIMC-2018-STEM-275

DEMOGRAPHIC PROFILES THAT INFLUENCE ONLINE SHOPPING INTENTIONS AMONG MALAYSIANS.

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Abstract

Online shopping has gained widespread popularity since the last two decades. It had changed traditional shopping styles by more convenient way of shopping via the internet. Malaysia being a central hub of South East Asia is a big consumer of online shopping. In this research the author has evaluated the effects of demographic attitudes towards the intention to shop online. The data was collected from internet users in the Klang valley region by distributing the Google form through emails, Facebook groups and face to face distribution. SPSS 23.0 was used to calculate the results from collected data. An independent sample T-test was performed to evaluate the effects of gender towards the intention to shop online and one way ANOVA, to check the demographic attitudes, including age, monthly income, ethnicity and education towards the intention to shop online. The results revealed that there are significant differences based on age, income, and ethnicity. In terms of economic status, naturally people with higher income shop more as compared to people with less income. On ethnicity, it was found that the Malays shop online more followed by the Indians and Chinese while the foreigners shop the least. For age, people aged between 41 to 50 shops more as compared to other age groups. The study also revealed that there was no significant difference in terms of gender and education level. Interestingly, both males and females shop online. Lastly, another remarkable finding is that education levels also do not influence the intention/behaviour of online shopping.

Keywords: Intention to shop online; Malaysia; Anova; T-test; Demographic Attitudes.

AIMC-2018-STEM-276

ELECTROENCEPHALOGRAPH (EEG) STUDY OF MENTAL FATIGUE IN LEARNING THE PHYSICS AT SENIOR HIGH SCHOOL'S STUDENTS

Corresponding Author: Faradhina Azzahra
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Abstract

The result of national examination in Senior High School students of Indonesia fluctuated for the last 3 years particularly in Yogyakarta. This examination is one of the national indicators for the achievement in the knowledge comprehension among the student on a certain subjects. Physics is a subject tested producing digression on the average score for last 3 years; 2015-2017. Some factors that contributes are learning process method, environment, subject, teacher, and student’s cognitive manner. However, latest factor has a high effect on accomplishing a success. The objective of this study is to investigate the mental fatigue of students in taking a part of teaching-learning process of Physics by analyzing the brain activity at cognitive system in 4 sessions. It is the combination of learning method (autodidact and non-autodidact) and condition (late morning and afternoon). An experimental study was conducted at laboratory to record beta, alpha and theta wave of brain’s produced by electroencephalograph (EEG). Four students of Senior High School were participated in this study to attend a learning process of Physics for 90 minutes in each session. Non-parametric statistical analysis was done to test the hypothesis. The result of this study showed that the autodidact learning method in the late morning for 54.25 minutes had a better performance in learning the Physic subject.

Keywords: electroencephalograph; mental fatigue; student; senior high school; Physics

AIMC-2018-STEM-279

IMPLEMENTATION OF BUILDING INFORMATION MODELLING (BIM) IN BUILDING DESIGN FOR ENERGY MINIMISATION IN ALGERIAN ARCHITECTURE FIRMS

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Abstract

Abstract. Building Information Modelling (BIM) is becoming a widespread and common approach in the design, construction and maintenance of building facilities. In Algeria, many challenges are facing by the architects in BIM implementation during the design stage for building energy minimisation such as the financial challenge, the high cost of BIM software, lack of knowledge in using BIM technology, and staff training. The objectives of this research are to investigate the challenges and to recommend the key factors of BIM implementation in building design for energy minimisation. This research undertook quantitative approach by using questionnaires survey to achieve the objectives. 190 questionnaires were distributed to architects in the Algeria, 72 responses were returned and the data were analysed by using SPSS software. The findings identified various challenges such as financial, cost of training, lack of knowledge, weak support from the government, and absence of clear consensus to implement BIM. The research also shows the key factors of BIM implementation which are BIM training for architects, secure the necessary resources, financial support, awareness about BIM, coordination with firms already used BIM, and selection of suitable projects to implement BIM. In conclusion, this research gives recommendations to the architects in term of challenges and key factors of BIM implementation in building design for energy minimisation.

Keywords: Building information modelling, energy minimisation, building design, Algeria

AIMC-2018-STEM-286

MODELLING CHARGING AND DISCHARGING STRATEGY FOR BATTERY ENERGY STORAGE SYSTEM

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Abstract

This paper gives an overview of modelling charging and discharging strategy for battery energy storage system carried out using Simulink/MATLAB software. Battery energy storage system is designed to continuously power supply when there is deficit of energy generation and production from the hybrid renewable energy system. In another word, the battery energy storage system integrated in the hybrid renewable energy system acts as an uninterrupted power supply for such kind of systems. Therefore, a strategic control to charge and discharge battery energy storage system is required to allow the system to operate without any disturbance. This paper introduces hierarchical charging and discharging method for battery energy storage system. The adopted method to charge and discharge hierarchically and alternatively charge and discharge each battery energy storage system without deteriorate the batteries health at every State-of-Charge (SoC) and Depth-of-Discharge (DoD) of 20%. The obtained results from the proposed method have successfully validate the methodology of developed hierarchical charging and discharging of battery energy storage system which is based on 20% SoC and DoD.

Keywords: State of Charge; Depth of Discharge; Battery Energy Storage System; Hybrid Renewable Energy System

AIMC-2018-STEM-290

AN INVENTORY MODEL FOR LINEARLY TIME DEPENDENT DETERIORATING ITEMS WITH POWER PATTERN,SHORTAGES AND TIME VARYING DEMAND

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Abstract

In this paper, a deterministic inventory model for items with linearly deteri-oration is considered. Demand is time dependent and assume to follows a powerpattern. Shortages are permitted and backlogged. We derived an optimal solutionthat minimizes the total average cost. Numerical examples are given to justifiedthe eciency and correctness of the proposed model. We investigated how optimaldecisions are affected by changes in different parameters in the model.

Keywords: Inventory model,Shortages,linearly deterioration, power demand pattern.

AIMC-2018-STEM-293

PHOSPHORUS REMOVAL FROM FOOD PROCESSING INDUSTRY WASTEWATER USING UNAERATED HIGH CALCIUM LOW FERUM STEEL SLAG FILTER

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Abstract

The increase of phosphorus concentration in wastewater may lead to eutrophication in water bodies. The loading of phosphorus in water bodies was due to the discharge from the point sources and non-point sources. Eutrophication was characterized by the dense growth of plants and algae. Eutrophication can cause the growth of harmful blooms algae if the concentration of phosphorus was increased. In addition, excess growth of algae may eventually lead to severe deterioration of the quality of water bodies. When there is an increase of nutrients such as phosphorus and nitrogen, oxygen depletion accelerates due to the extensive growth and decomposition of algae in the water. This shows that the phosphorus is hazardous to the human, aquatic life and environment. Food processing wastewater also contributes to the production of phosphorus. Steel slag filter emerged as a promising method for phosphorus removal from food processing industry wastewater. However, study of steel slag on phosphorus removal from industrial wastewater is limited. Therefore, the objective of this study is to study the effectiveness of unaerated high calcium low ferum steel slag filter to remove phosphorus from food processing wastewater which contains high phosphorus and high starch. Influent from Azhar Food Supplier and effluent of unaerated steel slag filter were sampling and analyzed weekly. This experiment was conducted for about 6 week. The parameters measured to evaluate the efficiency of the steel slag filter were TP (Total Phosphorus), COD (Chemical Oxygen Demand), Alkalinity, Turbidity, DO (Dissolved Oxygen), Temperature and PH. The removal efficiency of phosphate for the entire system found that the system has high efficiency in the removal of phosphate in the range of 46-65%. Therefore, this shows that the unaerated high calcium low ferum steel slag filter can act as an effective adsorbent for phosphorus removal in wastewater.

Keywords: eutrophication, steel slag, industrial wastewater

AIMC-2018-STEM-295

COMPRESSIVE STRENGTH OF CONCRETE CONTAINING STEEL WIRE FIBRES

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Abstract

Recently, the interest of using steel fibres as additional reinforcement materials in concrete has received a great attention of researcher. This paper presents the use of steel wire fibres (SWF) which formed manually as L shapes with the length of 10 mm x 10 mm. To investigate the performance of SWF in concrete, the different percentages of SWF in range of 0.2% to 1.0% were used. The investigation was initiated with investigation on the degree of workability of fresh concrete. Then, all the samples were cast and tested under compression after the sample through the curing process for 28 days. Based on the experimental results, it was found that the increment of SWF content up to 0.6% was increased the compressive strength of concrete.

Keywords: Fibrous Concrete; Steel Fibre; Compressive Strength; Workability

AIMC-2018-STEM-307

EVALUATION OF MARKER BASED REFERENCE SYSTEM FOR HEAD-POSE DETECTION

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Abstract

Germany is one of the largest growing and leading economy in Europe. One of the main pillars for growth of its economy is the German automobile industry. It can be easily term as a major car-manufacturing hub in the world where the safety measures of the driver is one of the key parameter under consideration and many other augmented reality (AR), Advanced Driver Assistance System (ADAS) including; Automatic Emergency Brake Assist (AEB), Lane Departure Warning (LDW), Adaptive Cruise Control System (ACC) and many other systems also use the Head-Pose

estimation of the objects in real-time. And also, research and development on semi and fully automated vehicles is being done that leads to a safe, comfortable and autonomous world of driving, requires the Head-Pose Estimation as one of the main block.This research paper builds upon the modification of the existing algorithms introduced in the past several years and proposes/develops various techniques to significantly improve the functional performance for Marker-based Head-Pose Estimation.This research paper basically focuses on Marker based point-to-point matching technique to extract Head-Pose information in real time. Several points on the markers are detected in the image plane and are then matched with the pre- calibrated correspondent 3D points of the markers which estimate the position and orientation of the visible markers in the image. Furthermore, a bundle adjustment is done to acquire the pose by using sufficient number of marker- points from the image in the exactly pre-known formation. Finally, pose of specific markers-combination is transformed into Head-Pose.Firstly, a commercially available offline software called Photo modeler is been used for the statistical, scalable and compact formation of the Head-Model(introduced based on the appearance and 3D geometric information). This representation, achieved from offline learning process by statistical analysis of the Head-Model is used at run-time during the matching and estimation processes for limiting the hypothesis by incorporating the camera-image and 3D geometric consistency constraints. This allows controlling the effect of the complexity of the 3D Head-Model on the run-time performance.Finally, the most concerned part of this paper is the accuracy and precision of the Head-Pose. For which, the physical markers and combinational 3D marker- points (for the used algorithm) are been modified and then pre and post modification results are compared.

AIMC-2018-STEM-319

REAL-TIME ASSISTANCE OF SMART STICK FOR THE BLIND

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Abstract

Abstract: People who suffer from loss or running out of vision cannot be dynamic and play without relying on others and in order to make them independent and rely on themselves in the movement and to move freely be through a smart assistant. Smart Assistant is a Muscovite stick that can be used by the blind to avoid obstacles such as barriers, drilling, locating the blind and the parking brake. This proposed new design for the blind sticks is characterized by the use of the detector distance of ultrasonic tones and places are different in severity whenever the defect or limits the user whether the barrier or barrier as easily as can detect obstacles, potholes can determine the location of the user by sending a message to specify its location in an emergency. Such animals are called Electronic Travel Aids (ETA). The new design consists of an ultrasonic sensor, Arduino, a GSM chip, a vibrator, buzzer and a chargeable battery and headphone. The aim of this project is to build a sightless man stick that can detect obstacles, potholes and thus facilitate the blind person travel independently. The intellect of the general system is to provide a depressed price and well-organized navigation aid for blind, which conveys a sense of artificial vision by providing information about the environmental situation of static and dynamic objects around them. KeywordElectronic Travel Aid (ETA); Obstacle Detection; Arduino; ultrasonic sensor, GSM, Smart

AIMC-2018-STEM-325

ANALYSIS OF REVERSED LOGISTIC IN PHARMACEUTICAL INDUSTRIES IN PAKISTAN

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Abstract

In recent years, closed loop supply chain have gained considerable attention in industry and in academia based on environmental and socio economic factors. In the pharmaceutical industry, leftover medications that have not been properly disposed of, damage the environment and also might turn into a peril to people’s health if redistributed illegally in countries like Pakistan. This research analyzes the inventory and order flow dynamics in closed loop supply chain. To analyze reverse logistics practices for pharmaceutical industries in Pakistan. Specifically, analyzes the relationships between some reverse logistics factors (product returns duration/reasons, company receiving and disposing of drugs, theft and damage challenges with regard to returned drugs management) in pharmaceutical industries. Proper management of reversed logistics will be helpful in ensuring security of supply chain and prevent infiltration of counterfeits medicines. Application of better inventory management through information technology applications will improve reversed logistics as well as overall supply chain.

Keywords: Reversed Logistic; Pharmaceutical; Pakistan

AIMC-2018-STEM-327

INVASIVE AND NON INVASIVE SENSOR FOR THERMAL CONTROL OF BIPOLAR ELECTROSURGICAL DEVICE

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Abstract

Electrosurgery, which also known as radiosurgery, has been utilized as a part of various types of surgery for more than 100 years. Surprisingly, it has been recorded hat electrosurgery is a medium for surgery since 50 years prior.The most frequent complications after high-frequency electrosurgery are tissue burns. Thus, minimization of thermal injuries becomes one of the most important goals in the development of electrosurgical devices[5]. The problem is made difficult by continuous variation of the exposure parameters. Based on the current issue of ESU generator system, there

is a demand for research for developing thermal control on the electrosurgical process. This paper has the following objectives to develop the self-, regulate output power as a function of load to manage the thermal of Skin tissue by using thermal camera sensor. To implement advanced control system such as PID controller for the hybrid ESU thermal control.

Keywords: Electrosurgical, Burn tissue, PID, Self-regulated.

AIMC-2018-STEM-332

AN EVALUATION INSTRUMENT (Q-U) FOR MEASURING THE USABILITY OF BUSINESS INTELLIGENCE APPLICATION

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Abstract

The main purpose of Business Intelligence (BI) applications is to focus on supporting an organization’s strategic, operational and tactical decisions by providing comprehensive, accurate and vivid data to the decision makers. Usability testing is an extremely important element of software development. It focuses on how well users can understand and utilize a product to fulfill their intended goals. In the world of software development, most software functions tend to be complex and to ensure that such software will satisfy users, it is extremely important for this software is to have a high degree of usability. Usability can be considered as one of the factors in terms of determining of the best of use and ultimate benefit obtain from BI applications. To gain feedback from the actual users about BI application usability a usability testing should be conducted. In this paper, in obtaining the appropriate BI usability attributes, the review of the literature has done in a Systematic manner (SLR) has been conducted and the Goal Question Metric (GQM) has been used to design such instrument, the Q-U instrument has developed and used in evaluation for BI application and the result has showed.

Keywords: Usability; Business Intelligence Usability, Business Intelligence Application

AIMC-2018-STEM-333

CRYSTALLINITY AND MORPHOLOGY OF SILICON CARBIDE THIN FILMS DEPOSITED USING VERY HIGH FREQUENCY PLASMA ENCHANCED CHEMICAL VAPOR DEPOSITION

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Abstract

Conventional plasma enchanced chemical vapor deposition (PECVD) has been widely used since decades to growth silicon carbide (SiC) thin film. However, lower RF frequency tends to produce hydrogenated amorphous silicon carbide (a-SiC:H) and poly-crystalline (p-SiC) type of films. This work aims to investigate the crystallinity, morphology and deposition temperature of SiC thin films at higher RF frequency. SiC thin films have been prepared on silicon substrates by using very high frequency plasma enhanced chemical vapor deposition (VHF-PECVD). The utilisation of plasma at higher frequency is predicted to give a great impact to allow the chemical reaction at lower temperature with better crystallinity and morphology compared to conventional PECVD method. In this work, the substrate temperature and deposition time were kept constant at 400oC and 15 minutes respectively, while the RF frequency was veried between 100 MHz to 200 MHz. The crystallization of SiC thin film samples was observed using X-ray Diffraction (XRD) and Raman Spectroscopy while the morphology examined under the atomic force microscopy (AFM). The results shows that the crystallinity and morphology of the samples were slightly improved as frequency increases. It was observed that the surface roughness of SiC thin films is improves from 5.43 nm at 100 MHz to 13.91 nm at 200 MHz.

Keywords: Silicon carbide; Plasma Enchanced Chemical Vapor Deposition; X-ray Diffraction; Raman Spectroscopy

AIMC-2018-STEM-334

STRUCTURAL PROPERTIES OF HYDROGENATED SILICON THIN FILM GROWN BY VERY HIGH FREQUENCY PLASMA ENHANCED CHEMICAL VAPOUR DEPOSITION.

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Abstract

Hydrogenated silicon (Si:H) thin film is one of the most promising technology that has been developed throughout the years. The film structure possess a variety of traits, especially in semiconductor and solar cell industry; depends on its molecule condition either in crystal or amorphous state. Plasma Enhanced Chemical Vapor Deposition (PECVD) technique is chosen in this work as it may give high quality of silicon thin film at a lower temperature compared to conventional Chemical Vapor Deposition (CVD) technique. This work aims to study the transition of silicon thin film from amorphous to crystal as the effect of very high RF frequency (VHF) deposition. Three frequencies were used throughout the experiment; 100 MHz, 160MHZ and 200 MHz. The films were deposited for 15 minutes on Boron doped Si (100) substrate while the temperature, power density and gaseous flowrate were kept constant. Raman spectroscopy, X-Ray Diffraction (XRD), Fourier Transform Infrared (FTIR) and Atomic Force Microscopy (AFM) were used as characterization techniques. The results shown that significant dependence of Si:H film with VHF as the transition occurs from amorphous to crystalline along with rough surface as deposition frequency increases. The XRD results depicted only Si (111) was grown, while from FTIR results, the amount of Si:H shown an increment with the increased in frequency.

Keywords: VHF-PECVD; Silicon Thin Film; Raman Spectroscopy

AIMC-2018-STEM-335

APPLICATION BIOHEAT EQUATION FOR HEAT TRANSFER MODEL OF FIRE FIGHTER'S BURN INJURY

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Abstract

Burn injury is the most common injury occur in firefighting. The purpose of the study is to assess the effectiveness of fire fighter’s personal protective clothing by utilizing heat transfer model in finite element analysis. The model applied bioheat equation to solve heat transfer through living tissue at muscle area. The validation of the heat transfer model was performed by comparing the predicted and measured skin temperatures with an acceptable error of less than 20%. The study found the skin temperature increases significantly with the heat flux intensities. The heat flux of 1200W/m2 causes to skin temperature 38.3oC. Skin temperature will gradually rises at t = 0 second and approaches it’s steady at t =198 seconds. The maximum air gap thickness reduces the heat stress effect. The reduction of 1 mm air gap thickness contributes to an increment of 0.2oC of the skin temperature.

Keywords: Heat transfer; heat stress; fire fighters; burn injury

AIMC-2018-STEM-336

MULTIVARIATE DESIGN ESTIMATIONS OF FLOOD EPISODES UNDER COPULA-BASED METHODOLOGY. STAGE-1: PARAMETRICAL DENSITY APPROXIMATIONS FOR MODELLING UNIVARIATE FLOOD MARGINALS FOR THE KELANTAN RIVER BASIN, MALAYSIA

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Abstract

Multivariate design evaluations via flood frequency analysis, often reveals an insightful concern for tackling several basin perspective hydrology & hydraulic water related queries. Based on accurate flood exceedance probability or design quantiles under different notation of return periods, several decision making strategies can be taken. Stochastic pattern could limit their exact occurrence prediction through any deterministic procedure but often facilitates for, analytical based hydrological simulations via extrapolation of historical streamflow characteristics through probability distributional framework. Actually, flood is a multidimensional extreme consequences usually characterized completely through its inter-correlated triplet random vectors i.e., flood peak, volume & durations of flood hydrograph. Thus, limit the applicability of univariate extreme analysis & their associated return periods therefore, could demands for establishing multidimensional joint probability constructions for various possible occurrence combinations among random extremes. Defining an appropriate & parsimonious marginal structure for each distributed flood vectors is often an essential concern before introducing into multivariate framework, where we usually inference about the population, based on finite distributed random samples. In this literature, at-site event-based methodology (i.e., block annual maxima) are incorporated for modelling univariate distributions for the independent and identically distributed (i.i.d) flood characteristics (i.e., annual maximum peak and their corresponding hydrograph volume & durations) under parametric distribution settings for 50-years streamflow observations of the Kelantan River basin at Gulliemard Bridge gauging stations, Malaysia. An interactive sets of 1-dimensional parametrical functions are undertaken via maximum likehood estimation for simulating flood densities. Recognizing the performance and consistency of best fitted structure among several candidate functions for each univariate samples are based on the degree of agreements between cumulative empirical & theoretical observations via different analytical & graphical based inferential or goodness-of fit measures. Several model evaluation testing such as, distance based criteria (i.e., K-S & A-D), information criteria score (i.e., AIC, BIC, & HQIC), error index statistics (i.e., MSE, RMSE, RSR, MAE, AME, PBIAS, NSE) are examined for revealing much decisive evidence in favour of most justifiable flood margins.

Keywords: Flood; Univariate distributions; Block annual maxima; Parametric functions, Maximum likehood estimation (MLE); Goodness-of-fit (or GOF) statistics

AIMC-2018-STEM-338

HIGH CORRECTNESS MOBILE MONEY AUTHENTICATION SYSTEM

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Abstract

Mobile money is a mobile embedded system that is used for money deposit, money withdrawer, items purchase, bills payment, airtime and internet recharges. The current mobile money authentication system uses personal identification number (PIN) that is feeble, vulnerable to shoulder surfers and susceptible to mobile money attackers. To solve this flaws of mobile money authentication system and to establish high correctness mobile money authentication system. A new mobile money authentication system is studied. Key aspects for high correctness of mobile money authentication system is to correctly accept real mobile money users and to properly reject mobile money non-users. To correctly evaluate the mobile money users by the authentication system, mobile money system should have functions to identify and verify the users and functions to authorize the transactions of the money. To detect the mobile money user, a unique identity number is registered during mobile money user enrolment. To verify the identity of the user and authorize

transactions, iris biometric authentication system is proposed and added in to the mobile money system. Iris biometric system is the most secured, robustness and reliable authentication system. It is real time verification system that cannot change with age and have minimum accuracy error rate. Users can easily accept Iris biometric system as mobile money authentication system because mobile camera can take the eye-iris images. In this paper a high correctness mobile money authentication system is propose that is based on iris biometric system and unique user ID number. The paper also outlines qualitative approach, interviewed number of mobile money users from their point of view and perspectives about the proposed iris system. Results show that most of the interviewee are highly welcome security strength to mobile money, particularly iris authentication system. Finally the paper discuss future research opportunities and limitations of the study.
Keywords: mobile money, personal identification number, authentication, iris bio-metric

AIMC-2018-STEM-339

PART I : PERFORMANCE ENHANCEMENT DESIGN OF FLAT-PLATE PHOTOVOLTAIC-THERMAL (PVT) AIR COLLECTOR SYSTEMS

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Abstract

Photovoltaic thermal (PVT) solar collectors are hybrid collectors that are able to generate simultaneous thermal and electrical energy by utilizing the solar energy. Various methods and designs for enhancement of the total performance of this type of solar collector have been studied in the literatures. In this study, the methods and designs are studied and compared in order to adopt the most suitable design for a proposed concentrating PVT solar air collector. The glazed-type solar collector was chosed due to its ability to produce higher total energy, hence the Fresel Lens (FL) array was integrated as glazing and primary concentrator. Compound parabolic concentrators (CPCs) as secondary concentrators respectively in an effort to increase the solar radiation incident and the distribution uniformity onto the PV panel. Furthermore, double pass flow channels were selected for heat extraction due to the larger surface area for convection by working fluid. Air was chosen ans the working fluid. The stuy has led to the development and fabrication of the proposed concentrating PVT solar air collector.
Keywords: Designs; Experiment; Methodology; Photovoltaic; Solar Collector

AIMC-2018-STEM-343

AN OVERVIEW OF MACROECONOMIC DETERMINANTS OF REAL ESTATE PRICE IN NIGERIA

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Abstract

Understanding the relationship between real estate price and macroeconomic variables in developed countries is appreciated first by considering the housing role in the macro economy. In modern capitalist economy, real estate sector remains the most important element of aggregate demand. Since residential real estate comprises the bulk of country’s tangible capital, the study on relationship between residential real estate price and macro economic variables are very significant for formulation of social and economic policies. The aim of the study is to examine the relationship between real estate residential price and macroeconomic variables in Nigerian economy. The study identified GDP, inflation rate, exchange rate, interest rate and crude oil price as the major determinants of real estate price in Nigeria.
Keywords: Macro-economic variables, real estate, real estate price, residential real estate

AIMC-2018-STEM-344

POSITION-AWARE 3D FACIAL EXPRESSION MAPPING USING RAY CASTING AND BLENDSHAPE

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Abstract

Creating realistic and believable facial expression animations of a character model in 3Drequire extensive and tedious work by animators. The usage of blendshapes is one of thepopular method to partially automate the animating process therefore reducing theworkload of the animators. In this paper, we propose a method of animating facialexpressions using a technique that combines blendshape and ray casting through a position-aware mapping process. This technique works by projecting a ray cast from the face of a 3Dcharacter model and maps the facial expression automatically using blendshapes when theray intersects any designated markers around the model. We tested this technique inUnity3D game engine on a simple 3D character model with blendshapes as a proof ofconcept and obtained several useful data.
Keywords: blendshape;ray casting;3D facial expression animation;position-aware concept

sAIMC-2018-STEM-345

REVIEW: PORPHYRIN DERIVATIVES AS PHOTOANODE FOR PHOTOCURRENT GENERATION SYSTEM

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Abstract

Porphyrin derivatives are known to exhibit versatility in light absorptions and redox activities. Therefore, porphyrins are frequently used in optoelectronics and photovoltaics applications. With adequate electron transfer ability and capability to acquire light in wide wavelengths, porphyrins become eminent in light-induced electron donating systems, leading to applications in dye-sensitized solar cells and bulk heterojunction solar cells. According to 10th Malaysia Plan, by 2015 5.5% of total electricity in Malaysia should come from renewable resources for instances solar, wind, thermal, biomass and so on. Minister of Energy, Water and Communications Malaysia introduced the National SURIA1000 programme that giving a financial incentive for installing photovoltaic in their building which called “Building Integrated Photovoltaic (BIPV)”. Therefore, this review is discussing related research employing porphyrin derivatives that featured strong light absorptions that serving as a photoanode for a photocurrent generation system.

Keywords: porphyrin; photoanode; photocurrent

AIMC-2018-STEM-350

BIOHYDROGEN PRODUCTION FROM ULTRA-SONICATED PALM OIL MILL EFFLUENT SLUDGE: EFFECT OF SUBSTRATE TO INOCULUM RATIO

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Abstract

In the present study, the ultra-sonicated palm oil mill effluent sludge was used as inoculum to quantify the substrate/inoculum-ratio (SIR) effect, on dark-fermentative hydrogen production. The SIR of 0.50, 1.0, 1.50, 2.5 and 3.0 g Chemical oxygen demand (COD)/Volatile solids (VS) were investigated. Results suggested the SIR of 1.0 had highest cumulative H2 and production rate of 2055 ml H2 and 31 H2/h, followed by SIR of 0.5 (1935 ml H2 and 24 H2/h) and 1.5 (1890 ml H2 and 19 H2/h), respectively. In addition, SIR of 1.0 showed the maximum COD removal of 87%. These results provided an improved operational strategy that can lead to enhanced biohydrogen production when the ultra-sonicated POME is subjected as a sustainable feedstock for anaerobic digestion.

Keywords: hydrogen; palm oil mill effluent; ultrasonication

AIMC-2018-STEM-358

DEDEVELOPMENT OF MOTORCYCLE SECURITY SYSTEM USING RFID AND GSM TECHNOLOGY

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Abstract

This paper aimed to present a motorcycle security system with the application of RFID (Radio Frequency Identification) application and Global System for Mobile Communication (GSM) technology. A prototype was developed with Arduino Uno as the microcontroller that obtained the signal from MPU-6050 sensor. A second security layer was designed with the passive RFID (13.5MHz) for the motorcycle. Furthermore, an alert message was sent to the owner for any unauthorized access or front accident. The performance of the system is evaluated by looking at GSM response time based on distance’s examination. It shows a significant impact where distance may affect the message receiving time on mobile phone.

Keywords: Security system, RFID, GSM, Arduino Uno, MPU 6050 sensor, Response Time

AIMC-2018-STEM-362

FILTERING ARABIC SPAM BASED ON THE USER'S PERSPECTIVE

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Abstract

Most people every day received many emails from many senders they didn’t know him, this problem caused may researchers to developed systems that filter unwanted messages, but most researches are worked in English emails there were big gab in Arabic spam filtering, also most filtering system classify the messages based on the messages itself or the senders.To solve this problem we have developed a model filter the Arabic messages this model classify the message according to the person’s like because some messages where classified a spam by someone maybe legitimate by others. We have collected Arabic emails dataset for this study.The aim of this study is to develop a model that can use to classify Arabic Emails personally.

Keywords: filter; Arabic;spam;Email

AIMC-2018-STEM-371

INTERCHANGEABLE LEFT-RIGHT HANDED CHAIR-DESK FOR TERTIARY INSTITUTIONS

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Abstract

College is a very important part of a student life, with spending about six hours per day there, and 60-80% of that time spent in a classroom and maintaining a seated posture for more than four hours poses a risk to the musculoskeletal system. Considering this situation, and the possibility that inadequate college furniture is used, it is probable that postural alterations take place and problems develop in student’s c, which not only affect student’s health, but also their performance in the class. An estimated 50% of student in the world suffer some form of back complaint and many of these are related to poor seat design. How we sit and what we sit on affects the health of the spine. The comfort and functional utility of college furniture depend on its physical design in relation to the human body’s physical structure. Various international standard for college furniture establish ranges of body height of users and indicate the best respective size of desk and chair, regardless of the college level. This project help left-handed students that was been chronic back, neck, and shoulder pain because the way the student holds the pencil and writes with an inverted or "hooked" (bent wrist) style at a narrow desk must twist around in a contorted posture that is awkward and uncomfortable. Therefore, it is important to build an instrument for measuring the suitability of ergonomic requirements for interchangeable tablet arm chairs to the users. This project will focus on innovation of existing product using Pro Engineer (Pro E) Creo 3D Modeling Software and fabrication of product based on ergonomic requirement and focused on user perceptions. This instrument can be used in the furniture industry by engineers and product designers and in the purchasing process of tablet arm chairs for school and university.

Keywords: left - handed, musculoskeletal system, innovation

AIMC-2018-STEM-372

THE INFLUENCE OF UNOBSERVED HETEROGENEITY ON THE HOSPITAL INFORMATION SYSTEM EFFECTIVENESS: THE CASE OF MALAYSIAN PUBLIC HEALTH INSTITUTIONS

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Abstract

Unobserved heterogeneity can produce invalid empirical results that possibly lead to wrong conclusions. Positive and significant relationships between the study constructs may be negative and insignificant with the presence of unobserved heterogeneity at the group-specific level of data analysis. In response to this issue, the work discusses the use of Partial Least Squares Prediction-Oriented Segmentation (PLS-POS) method to detect, capture, and treat heterogeneity in a cross-sectional survey data on the effectiveness of multiple hospital information systems (HISs) adoption by Malaysian public health institutions. The results indicated that reflective measures supported the convergent validity and discriminant validity across three segment groups; whereas the path coefficients estimates differ significantly across all groups for every measuring effectiveness predictor. A moderator of user experience is insignificant in all segment groups, proving no difference whether more or less experienced HIS users can influence the high or low performance of health professionals. Also, the predictive power of the model is greater in two groups, demonstrating the effectiveness of HIS adoption. This method contributes significantly to the present quantitative statistical data analysis; thus managerial actions can be efficiently taken to cater the problems of low effective use and poor user performance on the particular groups of HIS users.

Keywords: unobserved heterogeneity; PLS-POS; segmentation; HIS effectiveness

AIMC-2018-STEM-373

STUDY OF THE AMOUNT OF THE DOMESTIC ENERGY CONSUMPTION AT KOLEJ KEDIAMAN PELAJAR UTHM PAGOH BY RELATING WITH CARBON DIOXIDE EMISSION AND ITS IMPLICATION TO THE ENVIRONMENT

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Abstract

Air pollution is closely related to the impact of global greenhouses emissions. In science context, Global warming is primarily a problem of too much carbon dioxide (CO2) in the atmosphere, which acts as a blanket, trapping heat and warming the planet. As we burn fossil fuels like coal, oil and natural gas for energy, carbon accumulates and overloads our atmosphere. The carbon dioxide emission is closely related to the electric-charging sector due of the electricity-purging process as a result of combustion of coal, natural gas, oil and uranium. All these combustion processes will release carbon dioxide gas causing carbon dioxide gas to be the major contributor to global warming. Based on electricity generation in Malaysia, most processes involve combustion of fuel sources which is turn carbon dioxide emission into the air where the pollution occurs. The increases the demand for energy, the higher index of pollution causes of carbon dioxide emissions. Awareness among the community is needed reducing energy consumption for the next generation. Therefore, this study is to know the uses of energy consumption of students in Kolej Kediaman Pelajar UTHM Pagoh based on the daily average of electricity used. Subsequently the uses of the energy consumption will be exchanged in the form of the amount of carbon dioxide emission and it determined based on the energy used. Through

the study, we are unconsciously exposed to how much energy that we spend and our contribution to air pollution based on energy consumption. In addition, if individuals are concern about decline their energy consumption, he also can reducing the rate of air pollution where carbon dioxide gas is released during power generation through charcoal combustion.

Keywords: Carbon dioxide;global greenhouse emissions;global warming;energy consumption

AIMC-2018-STEM-374

NOISE SOURCE IDENTIFICATION IN A CORDLESS IMPACT DRIVER

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Abstract

Impact driver has adequate torque to tackle almost all bolting as intended by the user. This is achieved by the high force generated from the impact mechanism. From the continuous hammering in the impact mechanism, a series of torque impulse is transmitted to screw or bolt. However, the impact driver produce noise close to 90 dBA in a prolonged exposure. Suppressing this noise will make the tool usable at any environment without damaging user’s hearing nor disturbing residents around the work place. A study is made here to identify the noise source and the reasons of its occurrence. Operational deflection shape study is made to fulfil this objective. Based on the findings, several potential solutions to tackle the structure-borne noise and air-borne noise are proposed and their effects towards noise attenuation are studied.

Keywords: noise and vibrations; impact; impact driver; impact noise

AIMC-2018-STEM-375

ERGONOMIC DESIGN OF THE INNOVATIVE “CANTING” FOR DISABLE

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Abstract

Batik is one of the world cultural heritages from Indonesia which is recognized UNESCO. It constitutes an identity of Indonesian culture, which owns a picturesque artefact. This batik is made from a piece of white fabric, wax, and dye. The process of its manufacturing requires a high skill in creativity, thoroughness, and deep patience. Furthermore, it is also needed a special equipment which is known as "Canting". This equipment is a traditional tool for painting batik in various kind of unique sketch design. The tool is operated by hand such that normal craftsmen are needed. However most of the disable people that have no arm is interested in painting batik as a good craftsman. Thus, it is significant to provide the canting operated by foot. Objective of this study is to design an ergonomic and innovative canting to accommodate disable people whose foot for painting. Survey was conducted to identify user’s criteria with distributing questioner. Theory of inventive problem solving is used as a method to determine the inventive principle of design by identifying contradiction between improving feature and worsening feature. Physical specification is developed based on this principle and statistical analysis is implemented to test the hypothesis for validation of the purposed design. Result of this study shows that the developed innovative canting is valid to satisfy disable user requirement at 5% of significant level and easy to operate by foot ergonomically

Keywords: Canting Design, Innovative Design, TRIZ, Disable, Ergonomic

AIMC-2018-STEM-381

A DIAGONAL NEWTON-LIKE METHOD VIA IMPROVED RATIONAL APPROXIMATION MODEL FOR SOLVING LARGE SCALE SYSTEM OF NONLINEAR EQUATIONS

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Abstract

AIMC-2018-STEM-385

RISK MANAGEMENT PRACTICE BY THE MALAYSIA PROPERTY DEVELOPMENT COMPANY: A REVIEW

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UTM JOHOR BARHU

Abstract

Risk management consciousness has over the years became an area of focus and importance yet research on the topic is very limited with various risks factors such as financial, market and economic risk that has been reported by developers in their financial report in Malaysia. The aim of this paper is to assess the application of risk management practice by property development companies in Malaysia. This will be evaluated by appraising the annual reports from the website of listed property development companies in Malaysia to assess a range of risk factors to determine the significance of risk management practices in property development activities. Some companies are seen to be conducting a good risk

management practices, although the overall property development company sector in Malaysia has the opportunity for advancement to meet up with international best practice in risk management

Keywords: Risk Management; Property Development; Property Developer; Malaysia

AIMC-2018-STEM-388

EFFECT OF ACID CONCENTRATION ON EXTRACTION OF SILICA FROM RICE HUSK VIA ACID LEACHING TREATMENT

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Abstract

Rice husk has been used as a thermal energy source for electricity generation, resulting in the formation of silica from rice husk as a by-product. The purpose of this research is to analyze the effect of acid concentration through the extract of silica in the rice husk via acid leaching treatment, due to silica as a raw material that can be apply in industrial. Acid leaching treatment was implemented to extract the silica and organic in rice husk. Besides, the parameters such as concentration of acid and leaching time of organic and inorganic acid during leaching method were also compared. In this research, hydrochloric acid (HCl) and citric acid (C6H8O7) were used for production of silica from rice husk. Various samples were characterized using Fourier Emission Scanning Electron microscopy (FESEM), X-ray diffraction (XRD) and X-ray fluorescence (XRF). The result indicates that highest percentage silica of rice husk after leaching was on 1.0M at 60 minutes and has an amorphous structure.

Keywords: silica, rice husk, inorganic acid, organic acid, agriculture waste

AIMC-2018-STEM-390

MANAGEMENT INFORMATION SYSTEM (MIS) SHIPPING CEMENT BAG VIA LAND TO SUMATERA AREA IN PT SEMEN PADANG

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Abstract

The development of automation technology becomes one of the important information media in Management Information System (MIS), so in need of an organization that has the provision of appropriate information. For the organization, the provision of appropriate information can meet the implementation of organizational tasks. PT Semen Padang has many uses of information technology in its operation, however the presentation of management information system of delivery of cement bag via land still manual not yet database so that the information presented becomes slow, because it must count traditionally. For this built rancagan computer-based management information system to facilitate the process of delivery of cement bagThe design of this system can be built with relational database, This relational database method is a system design that relates in the form of tables so that it can present update informationThis finding is a model of transaction processing system, Input, transformation and output of cement bag delivery system. Data is collected from all physical and environmental systems and then entered into the database. Data processing software transforms data into information for management and users within the PT. Semen Padang.Contributions to PT Semen Padang can use the application of cement bag management information system with Microsoft Access flatform.

Keywords: Management Information System, Cement Bag, Delivery, Relational Database, Information System Application

AIMC-2018-STEM-392

EFFECTIVE USE OF HEALTH INFORMATION SYSTEMS AS A MEDIATOR FOR INCREASING CLINICIAN PERFORMANCE

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Abstract

Medical errors are prevalent barriers that negatively affect clinicians’ productivity when using a health information system (HIS). In Malaysia, medication errors have critically increased in the past few years and this phenomenon requires immediate academic and managerial attention. This study aimed to determine whether the effective use of HIS could predict the effects of system, records, service and knowledge qualities on the performance of clinicians. A total of 1200 surveys were administered to clinicians in different health institutions with HISs. The mediation effects based on 817 usable data were analyzed using partial least squares. Results demonstrated that the effective use had a positive effect on the outcome variable and partially mediated the positive effects of quality predictors towards enhanced user performance. In other words, effective use of HISs increased the performance of clinicians through ease of system functions and features, well-organized contents and minimal data entry errors in EHRs, on-site technical support, and efficiency of drug order entry and decision support tools usage. Future evaluation studies of HIS should integrate effective use, and hospitals must strongly consider this predictor for the system upgrade or new implementation to avert medical errors when the use of the system is compulsory.

Keywords: Health Information Systems; Health Personnel; Work Performance; Mediation

AIMC-2018-STEM-393

THE PERFORMANCE OF WINDSHIELD GLASS WASTE AS A REPLACING MATERIAL FOR COARSE AGGREGATE IN CONCRETE

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Abstract

Aggregate mining is an activity that cause ecological imbalance and adverse impact to the environment inclusive of erosion in the coastal and river bank, water pollution, increasing of flood, noise and air pollution. Nowadays, sustainable development has encourage us to sustain the balance between development of the nation and the biodiversity conservation. In order to reduce aggregate mining and promote sustainable development, this study aim to determine the strength and properties of concrete made from windshield glass waste as a replacing material for coarse aggregate. The windshield glass is collected from waste of car windshield at automobile workshop. The concrete cube specimens with size of 100 mm3 were made from different percentage of windshield glass (0%, 10% and 30%). The total of 36 cubes were tested for compressive strength and water absorption, while 18 cylinder specimens were tested for tensile strength in order to obtain the concrete performance at 7 and 28 days. The optimum percentage of windshield glass waste used in concrete as a replacing material was attained at 10% as the value of its strength is slightly higher than normal concrete.

Keywords: Aggregate mining; Sustainable development; Concrete; Windshield glass waste; Coarse aggregate

AIMC-2018-STEM-394

DESIGN AND INSTALLATION OF CONTROLLED DRIP IRRIGATION SYSTEM

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Abstract

Globally, the agriculture sector is a major consumer of available freshwater. Pakistan is an agricultural country and its major economy depends upon the agriculture sector. In Pakistan, freshwater scarcity rate is high and further increasing due to the lack of proper utilization of the freshwater resources by farmers, which is very detrimental to the economic structure of the country. In such a scenario, controlled drip irrigation system serves the suitable technique to limit the water supplied to the crops at regular interval for agriculture, and replaces the flood irrigation system. Basically, in drip irrigation system, the humidity moisture and temperature of the crops are monitored and controlled by sensors and actuators. About 93% of the freshwater resource is consumed for the irrigation purpose. As we know that water is an essential involvement for producing agriculture goods & entire agro-food supply. This study is aimed at designing and installation of controlled drip irrigation system for crop fields at Nasarpur, Sindh, Pakistan. We expect that agricultural sector will become more productive by effectively using the fresh water resources. We can design drip irrigation for large scale projects. Converting ordinary irrigation into controlled drip irrigation may save water but may also result in higher energy use.

AIMC-2018-STEM-396

CHARACTERISTIC OF GREEN TECHNOLOGY FOR SUSTAINABLE RESIDENTIAL PROJECT

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Abstract

Receptivity of green technology for sustainable residential trend featured nowadays. Various advantages can be achieved if it starts from the beginning to implement green technology and sustainability starting from the home ownership. Commencement of business from developed countries such as Japan and the United States and most developing countries now participate strides to implement green technology and sustainability in every aspect. Green technology and sustainability is no stranger in the construction industry in Malaysia. However, many efforts should be intensified so that the implementation of green technology for the sustainable residential project can be accepted by the public. This is because the power to buy and own a home with green technology and sustainability concepts is in the hands of the buyer or the public. Continued efforts ensure that residential green technology and sustainable meet the characteristics favoured by the public, this study on characteristics of green technology and sustainability receptive to public for residential infrastructure in Malaysia. At the same time, it ensures that all parties involved in the construction industry whether from the relevant authorities, government agencies, private organizations and developers can play a key role in providing the best for the community, the nation and the future.

Keywords: green technology, sustainability, residential infrastructure, housing development, policy

AIMC-2018-STEM-397

EFFECT OF CFRP PLATE LENGTH ON FLEXURAL BEHAVIOUR OF GFRP REINFORCED CONCRETE BEAM STRENGTHENING

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Abstract

This research studies the effect of CFRP plate length on flexural behavior of GFRP strengthened reinforced concrete beam. CFRP plate was placed on the bottom of the beam to act as tension reinforcement. Ten beams were tested, largely divided into over-designed and under-designed reinforced beams. Each group had one steel reinforced concrete beam, one GFRP reinforced concrete beam and three GFRP reinforced concrete beam with different length of CFRP plate at the bottom of beam. Tested parameters included flexural strength, stress-strain relationship and deflection. Results indicated that all strengthened beams had improved structural performance where the maximum flexural strength increased by 102% and maximum deflection reduced by 35%.

Keywords: GFRP Bar; CFRP Plate;Flexural Strength; Deflection

AIMC-2018-STEM-400

ENERGY INTEGRATED DISTILLATION COLUMNS SEQUENCE OF 5-COMPONENT ALCOHOL MIXTURE VIA DRIVING FORCE AND THERMAL PINCH ANALYSIS APPROACH.

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Abstract

Distillation column is a well-known unit operation to perform the intended separation task in chemical and petrochemical industries. However, the common issue for distillation column is the large energy requirement, especially for multicomponent processes. Therefore, the sequence determination could be a key to solve the problem. This paper provides a methodology to produce energy integrated distillation columns sequence via driving force sequence approach. Then, it is supported by the thermal pinch analysis for further the energy saving in the process. The case study selected is distillation process of 5-component alcohol mixture. Based on the input data, two sequences for distillation columns namely direct sequence and driving force sequence were firstly simulated. Then, the resulting information such as target temperature, supply temperature and energy from condensers and reboilers have been extracted for thermal pinch analysis. Lastly, the energy requirements from the analysis (before and after pinch analysis) were compared for energy saving calculation. Based on the analysis results, the driving force sequence with pinch analysis successfully enhanced the 35% of the overall energy saving. Thus, it can be said that the driving force sequence and thermal pinch analysis approach namely energy integrated distillation columns sequence has a potential for further the energy saving of the distillation columns sequence for the selected case study.

Keywords: Energy Integrated;Distillation Columns Sequence;Driving Force Sequence;Thermal Pinch Analysis;5-Component Alcohol Mixture

AIMC-2018-STEM-405

REDESIGN OF INNOVATIVE AND ERGONOMIC COLLEGE CHAIR TO IMPROVE STUDENT PERFORMANCE

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Abstract

Poor sitting and an inconvenient change of sitting position during the teaching and learning process will inflicts the musculoskeletal disorder on several parts of body such that it may produce some problems for student. One of the problem is decrement of concentration level in apprehending what course material is. This fact can decrease the student performance. Thus, it is required an improvement the facilities especially the innovative chair to accommodate the students need. This paper presents a study to redesign the college chair for satisfying the students requirement that is more innovative and ergonomics. Kansei engineering method is used to determine the engineering specification of design with mapping process from student’s kansei. Anthropometry data is also used to support the design. Statistical analysis is conducted to test the hypothesis. Result of this study is a new innovative and ergonomic design of chair and valid to meet user's need at 5 % of significant level.

Keywords: Kansei engineering; sitting; ergonomic; innovative design; chair.

AIMC-2018-STEM-407

MUSCLE CONTRACTION ANALYSIS OF THE PROLONGED ASTRIDE-SITTING ON MOTORCYCLE USING SURFACE ELECTROMYOGRAPHY

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Abstract

Commonly, the motorcycle riders are in an astride position during the trip. They placed the legs on a pedal by the same token of passengers. It will produce the inner-thigh pressure which leads to the transient paresthesia in the form of an insufficient blood supply. This position is caused by hanged legs where the leg cannot reach to the pedal. Oftentimes the syndrome is experienced by children of 3-4 years old. The objective of this study is to investigate the health impact on the upper legs based on muscle contraction. The empirical study is conducted to record the signal of muscle contraction by attaching some sensors on Vastus Medialis muscle area. Twelve children have participated in this study. Their age is 3-4 years old. The experiment was conducted for one hour with two conditions of motorcycle that is off-engine and on-engine. The off-engine condition is motorcycle not having vibration and on-engine is a motorcycle engine producing vibration which transferring it to the body. The children were instructed to get a ride on a motorcycle and identified the muscle contractions on the thigh by using electromyography. Blood pressure was also measured to identify a state of the blood flow. Statistical analysis is done to test the hypothesis. The result of this study showed that prolonged sitting in on-engine condition is having higher muscle fatigue than off-engine.

Keywords: Paresthesia; Blood Pressure; Prolonged Sitting; Surface Electromyography; Pedal

AIMC-2018-STEM-408

A DIAGONAL NEWTON-LIKE METHOD VIA IMPROVED RATIONAL APPROXIMATION MODEL FOR SOLVING LARGE SCALE SYSTEM OF NONLINEAR EQUATIONS

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Abstract

In this paper, we proposed a new diagonal derivative free Newton-like method for solving the system of nonlinear equations via a diagonal derivative free rational approximation model. The rational approximation has been used recently to improve the performance of the Newton method. However, the approach required finding and storing the Jacobian matrix in each iteration. Usually computing the Jacobian is quite costly. We also, prove that this new approach has linear convergence and numerically efficient using various standard test function. The new approach can be used to solve a large-scale system of nonlinear equations.

Keywords: Rational Approximation Function; Newton method; Diagonal Jacobian;

AIMC-2018-STEM-411

PERFORMANCE OF CONCRETE GRAVITY DAMS WITH HEIGHT 100M AND 125M BASED ON INCREMENTAL DYNAMIC ANALYSIS

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Abstract

This paper investigates and studies the performance of concrete gravity dam with the height of 100m and 125m using incremental dynamic analysis (IDA). IDA is an emerging method that utilises multiple scaled ground motions record to evaluate the seismic demand of a structure via non-linear dynamic analysis. IDA curves were develop based on seven ground motions that fulfil the criteria: (i) the distance of earthquake event to the station is less than 15km, (ii) the earthquake magnitude is equal to or greater than 5.5M and (iii) the PGA is equal to or greater than 0.15g. The seven near-field ground motions were converted to response spectrum and scaled according to the soil type B to develop the elastic of response spectrum. The limit states of the dams were identified based on the cracking schemes and the crest displacement using IDA method. The displacement of yielding state and ultimate state for 100m dam is 33.67mm and 78.72mm respectively while the yielding and ultimate state displacement is 45.17mm and 92.04mm for 125m height of the dam. The crest displacement with height 125m increases about 34.16% for yielding state whereas the ultimate state is 16.92%. The results show a greater damage and displacement occurred on the taller dam as in full reservoir condition, taller dam with greater fundamental period received more significant damage at the heel and neck due to a greater depth of water. This allows us to study the performance of dam with various height under seismic loadings.

Keywords: Concrete Gravity Dam; Incremental Dynamic Analysis; Crest Displacement; Yielding State; Ultimate State

AIMC-2018-STEM-412

INVASIVE AND NON INVASIVE SENSOR FOR THERMAL CONTROL OF BIPOLAR ELECTROSURGICAL DEVICE

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Abstract

Electrosurgery, which also known as radiosurgery, has been utilized as a part of various types of surgery for more than 100 years. Surprisingly, it has been recorded hat electrosurgery is a medium for surgery since 50 years prior. The most frequent complications after high-frequency electrosurgery are tissue burns. Thus, minimization of thermal injuries becomes one of the most important goals in the development of electrosurgical devices. The problem is made difficult by continuous variation of the exposure parameters. Based on the current issue of ESU generator system, there is a demand for research for developing thermal control on the electrosurgical process. This paper has the following objectives to develop the self-, regulate output power as a function of load to manage the thermal of Skin tissue by using thermal camera sensor. To implement advanced control system such as PID controller for the hybrid ESU thermal control.

Keywords: Electrosurgical, Burn tissue, PID, Self-regulated.

AIMC-2018-STEM-418

THERMAL PROPERTIES AND MOISTURE CONTENT ANALYSIS OF STARCH FIBER FILLED POLYVINYL ALCOHOL-POLYVINYL ACETATE (PVA-PVAC) BIOFILM

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Abstract

This study aimed to determine the effect of starch fiber onto thermal properties of Polyvinyl Alcohol (PVA)-Polyvinyl Acetate (PVAc) blends. Starch fiber was used in this study as the reinforce filler. The starch fiber (SF) was prepared by extracting the potato’s peels. Prior to the preparation of biofilms, the PVA and PVA were plasticized using glycerol and distilled water. The biofilm of SF-PVA-PVAc were produced using casting technique. A thermal analysis was conducted on the biofilms to investigate the thermal stability of the sample using Thermogravimetric Analysis (TGA). Besides the moisture content of the derive biofilm was also studied. It was found that biofilm with higher composition of SF noted the highest degradation Temperature (Tdg). Conversely, biofilm with highest composition of SF recorded the lowest moisture content. This may be attributed to the content of fiber which predominated the matrix of biofilm.

Keywords: Polyvinyl Alcohol; Polyvinyl Acetate; Plasticizer; Fiber

AIMC-2018-STEM-419

WATER REUSE STRATEGY IN LEATHER TANNERY PROCESS

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Abstract

*Water reuse strategy in leather tannery processAditya Wahyu Nugraha *1), Ono Suparno 2), Nastiti S Indrasti 2)1) Student of Bogor Agricultural University, Bogor, West Java, Indonesia2) Lecturer of Bogor Agricultural University, Bogor, West Java, Indonesia*Email: aditya.wahyu28@gmail.com In leather tannery process, there are some steps which aqueous medium to produce leather. It causes environment impact like much amount of wastewater which discharges in the environment. All of the process to produce leather, water is used as reaction medium of chemical material and skins to remove some component of skins are not used to produce leather in the leather tanning process. The aim of the research is to reduce water usage and wastewater with water reuse method in some steps of the leather tanning process. Water reuse application is evaluated like pollutants in wastewater, water input and water output, and leather (wet blue) characterization. The results showed that water reuse application increased pollutants in wastewater, but it could reduce amount water usage and wastewater. In addition, leather (wet blue) which was produced meet with Indonesian standard quality of jackets.*

Keywords: Tannery process; Water reuse; Leather (wet blue).

AIMC-2018-STEM-421

A SMART WEB PORTAL FOR EARLY CHILDHOOD EDUCATION BASED ON SOA

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Abstract

Early childhood quality education is a vital component of every child’s life. Every pupil’s achievement in life is influenced by their early educational experiences. Modern information technology significantly contributes to the improvement of the processes in the childhood education system. In spite of the constant improvement in the field of information technology, the field of childhood education service system has not witnessed significant advancement during the last decades. This study proposed a smart web portal for early childhood education using latest web tools

and technologies. The prototype smart web portal developed for Service Oriented Architecture approach. It is composed of four modules such as general bulletin, parent and teacher communication, child and family tracking, online payment and parent’s forum. The smart web portal is to serve as a platform for integrating intelligence’s information store and organize specific information in a rapid and efficient manner and ensure their delivery to the respective parents and teachers.
Keywords: Smart, Web portal, childhood, prototype, architecture

AIMC-2018-STEM-425

EVALUATION OF RISK MANAGEMENT CAPABILITY OF PUBLIC-SECTOR PARTICIPANTS IN BUILD-OPERATE-TRANSFER HIGHWAY PROJECTS IN NIGERIA

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Abstract

Risks are inherent in construction projects but are more in BOT highway construction projects due to a large number of participants and many agreements involved. Therefore, there is need to have an adequate understanding of risk management capability of the parties to ensure risks are properly and adequately managed. This paper seeks to evaluate the risk management capability of the public-sector participants executing BOT highway projects in Nigeria. This study used questionnaire survey to elicit information from experts who are active stakeholders in BOT highway construction in Nigeria. The population of the study comprises of government officials, contractors, concessionaires, bankers, consultant engineers and quantity surveyors, and academics. The study adopted stratified random sampling. Seventy-two (72) responses were obtained from One hundred and ten (110) questionnaires administered. The study adopted fuzzy synthetic evaluation (FSE) method in the analysis of data because of its ability to handle multi attributes and multi-criteria nature of the problems to be solved. The result indicated that public party organization’s culture and awareness, risk management practice and application, risk management resources and risk management process are: 0.391, 0.353, 0.357 and 0.384 respectively. This implies that their risk management capability is below average. They operate at 'novice' level. The reason for the low overall risk management capability of the public sector could be attributed to low awareness on risk management and its importance in ensuring efficient and effective project delivery by the public-sector participants. The study concluded that there is a need for public-sector participants to give more attention to risk management practice and application, embrace formal risk management with considerable training to further improve their risk management capability. This will ensure proper handling and management of risks in the BOT highway sector and ensure successful projects delivery.
Keywords: Build-operate-transfer, capability, construction, management, risk.

AIMC-2018-STEM-433

TOXICITY PREDICTION OF IONIC LIQUIDS BASED ON VIBRIO FISCHERI BY USING DENSITY FUNCTIONAL THEORY

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Abstract

By using a model called density functional theory, the toxicity of ionic liquids can be predicted and forecast. It is a theory that allowing the researcher to have a substantial tool for computation of the quantum state of atoms, molecules and solids, and molecular dynamics which also known as computer simulation method. It can be done by using structural feature based quantum chemical reactivity descriptor. The identification of ionic liquids and its Log[EC50] data are from literature data that available in Ismail Hossain thesis entitled “Synthesis, Characterization and Quantitative Structure Toxicity Relationship of Imidazolium, Pyridinium and Ammonium Based Ionic Liquids”. Each cation and anion of the ionic liquids were optimized and calculated. The geometry optimization and calculation from the software, produce the value of highest occupied molecular orbital (HOMO) and lowest unoccupied molecular orbital (LUMO). From the value of HOMO and LUMO, the value for other toxicity descriptors were obtained according to their formulas. The toxicity descriptor that involves are electrophilicity index, HOMO, LUMO, energy gap, chemical potential, hardness and electronegativity. The interrelation between the descriptors are being determined by using a multiple linear regression (MLR). From this MLR, all descriptors being analyzed and the descriptors that are significant were chosen. In order to develop the finest model equation for toxicity prediction of ionic liquids, the selected descriptors that are significant were used. The validation of model equation was performed with the Log[EC50] data from the literature and the final model equation was developed. A bigger range of ionic liquids which nearly 108 of ionic liquids can be predicted from this model equation.
Keywords: Ionic liquid, HOMO, LUMO, MLR

AIMC-2018-STEM-434

STUDY EFFECT OF DIFFERENT COMPOSITION OF CHITOSAN WITH LINEAR LOW DENSITY POLYETHYLENE (LLDPE) FOR MECHANICAL AND ANTIMICROBIAL ACTIVITY

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Abstract

Recent development employed chitosan act as a new alternative material for food packaging. Chitosan based film can be potentially used as biodegradable, antimicrobial agent through electrospraying, spreading and dipping/immersion methods and it non-toxic additive which can be environmental friendly compared to inorganic additives. A composite film were prepared by blending LLDPE and chitosan with different formulation via twin screws compounder. This research was used Film blowing process to produce plastic film. The effect of different composition of chitosan used with linear low density polyethylene (LLDPE) blend for mechanical strength and antimicrobial activity with different concentration of acetic acid were investigated. The tensile test shows that, the LLDPE added can improve the strength of the pure chitosan. The strength of sample before coated were lower compared to the sample has been treated and coated. For antimicrobial test, all the sample show the effect with different concentration of acetic acid (1% and 2%) against Escherichia Coli (E.coli). The increase percentage of chitosan produced lower diameter zone of inhibition. The test was carried out for 24hours to analyse the zone of inhibition.

Keywords: Tensile Test; Antimicrobial Film; Chitosan; Chitosan Film.

AIMC-2018-STEM-438

A CLOUD-BASED ENGLISH VOCABULARY ACQUISITION TOOL

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Abstract

Cloud computing promotes English vocabulary learning experience through an individual and collaborative learning environment. However, local institutes of higher education (HEI) students rarely apply Web 2.0 vocabulary learning tools because these tools do not focus on learners’ needs. They also do not incorporate any student-centred approach, vocabulary learning strategies or motivational techniques to cater to various learning styles. Hence, an improved cloud-based vocabulary acquisition tool will be proposed in this research. The objective of this research study is to investigate current factors that influence the awareness and readiness among HEI students to utilise vocabulary learning tools, formulate a conceptual framework for developing a cloud-based student-centred vocabulary learning tool, named VocabBook, design and develop a prototype of VocabBook for HEI students, and evaluate the functionalities and ease-of-use of VocabBook. VocabBook allows learners to enter their choice of words and look up the meaning. An online dictionary will be integrated into VocabBook to retrieve the semantics, syntax and usage of the search word. Learners will be evaluated by the quizzes using vocabulary acquisition strategies. Vocabulary quizzes can be shared among the learners in the study group. Gamification technique motivates learners to attempt the quizzes to compete among themselves for higher scores and ranking. UML-based Web Engineering (UWE) will be used to visualize the analysis and design stages. VocabBook is developed using Hypertext Preprocessor (PHP) language and tested according to the UWE models. The prototype is evaluated to ensure research objective is achieved. The findings of this research will be helpful for HEI learners to produce their own cloud-based vocabulary journal at their own pace through interactive elements. English academicians can use VocabBook in the vocabulary teaching and learning process inside or outside the classroom. VocabBook is available for different users across different software and hardware platforms without having to pay any fees.

Keywords: Cloud computing; cloud-based; UWE; PHP

AIMC-2018-STEM-439

CLASSIFICATION OF LAND USE/ LAND COVER CHANGES USING GIS AND REMOTE SENSING TECHNIQUE IN LAKE KENYIR RIVER BASIN. TERENGGANU MALAYSIA

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Abstract

AbstractGeographical information system (G.I.S) techniques and Remote Sensing (R.S) data are fundamental in the study of land use (LU) and land cover (LC) changes and classification. The aim of the article is mapping and classification of LULC of Lake Kenyir River basin within 40 years period (1976 to 2016). Multi-temporal Landsat images used are MSS 1976, 1989, ETM+ 2001 and OLI 8. Supervised Classification on Maximum Likelihood Algorithm method was used in ArcGIS 10.3. The result shows three classes of LULC viz Vegetation, Waterbody, and built up area. Vegetation is the dominant LC which is 100%, 78%, 70%, 66% in 1976, 1989, 2001 and 2016 respectively. While water body accounts for 0%, 20%, 25% and 30% in the years 1976, 1989, 2001, and 2016 respectively and built-up area in the remaining. The predominant LC changes in the study are the water body and vegetation, the earlier increasing rapidly at the expense of the later. Therefore, proper monitoring, policies that integrate conservation of the environment are strongly recommended.

Keywords: Remote Sensing; GIS; Environment;Land use; land cover

AIMC-2018-STEM-444

SUCCESS FACTORS FOR ADOPTION OF GREEN CONSTRUCTION SITE PRACTICES IN DEVELOPING COUNTIRES: A REVIEW

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Abstract

Certain factors contribute to the success or otherwise of the adoption of green construction site practices. The factors that contributes to the successful adoption of the practices are referred to as success factors. The advocates of sustainability in the construction process have identified some conditions whose presence are necessary to facilitate the smooth and seamless adoption of green practices on construction sites, so as to ensure sustainability of the environment. This paper presents a detailed and elaborate review of success factors (SFs) needed for building contractors to successfully adopt green practices on construction sites in developing countries. Peer reviewed articles published in reputable journals where reviewed. By systematically reviewing 46 recent literatures related to the subject matter, many success factors for green practices adoption on construction sites where identified. The factors identified include: client related factors, contracting organisation related factors, the economic factors of the construction area, environmental factors, site related factors, other stakeholders’ factors among many others. This paper will improve the understanding of the various construction project participants on the various factors that interplay to create an environment supportive for the adoption of green practices on construction sites based on the peculiarities of the construction environment in developing countries. It also creates the awareness on the importance of putting certain conditions in place to encourage conservation of the natural environment through construction in a sustainable manner. This paper builds on the efforts of other researches in the study of green construction, and contributes to the knowledge base with regards to onsite success factors in developing nations of the word. It is recommended that clients and contactors should take a critical note of these factors during conception of the construction projects to ensure a smooth adoption process of green site practices in developing countries.

Keywords: Critical Success factors; Adoption; Green construction site practices; developing countries

AIMC-2018-STEM-446

REALIBILITY OF HOUSING ATTRIBUTES INSTRUMENTS IN KLANG VALLEY

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Abstract

The world is aging and Asia countries are aging even faster. Malaysia is predicted to become an ageing nation by the year 2030. As the nation is growing older, less elderly live with their children thus placing them to age in place or also known as independent living.This paper seeks to produce empirical evidence of the realibity about elderly preference towards housing attributes to age in place. A sum of 56 respondents' from Klang Valley has responded to the questionnaire survey regarding their preference towards housing attributes. The questionnaire measures three attributes namely, housing features, housing environment ad technology. The study reveals that the entire housing attributes stated are important to assists the elderly’s daily activities.

Keywords: Reliability test; Elderly; Housing Attributes

AIMC-2018-STEM-451

AN OVERVIEW OF LOCAL POSITIONING SYSTEM: TECHNOLOGIES, TECHNIQUES AND APPLICATION

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Abstract

Positioning system like global position system (GPS) and Local position system (LPS) have become very important in a large number of applications such as monitoring and tracking, etc. Because of the limitations of GPS in indoor environments due to the lack of line of sight (LoS), the use of LPS has become a true necessary to estimate user’s or object position with a good accuracy. In order to choose the best LPS system, a compromise between accuracy, precision, power consumption, coverage an cost should be taken into account. This paper introduces an overview of LPS performance parameters, current technologies, techniques and methods used by LPS. On th other hand, the comparison between LPS technologies and techniques use based on those technologies are also discussed. Furthermore, the LPS’s applications that hav been done by previous researches such as human tracking, object tracking, animal tracking and utomatic guide vehicle (AGV) tracking will be discussed. Also in this paper LPS which contain three anchors and on tag, by using lab view the position of each anchors can be read successful after connection all anchors and tag with PC and router. We believe this paper would catalyze further investigation by the researcher which is interested on the LPS field.

Keywords: Local positioning system, global position system, LPS techniques and application, tracking, automated guide vehicle.

AIMC-2018-STEM-461

UTILIZING ELECTRICAL ARC FURNACE STEEL SLAG IN ENVIRONMENTAL APPLICATION –A REVIEW

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Abstract

Steel slags are by-products of re?nement process in steel making industries. Type of slags is categorized by the operating conditions. Several material characterization methods, such as X-ray Di?raction (XRD), Scanned Electron Microscopy (SEM) and Inductive Coupled Plasma Optical Emission Spectrometry (ICP-OES) are used to determine elemental composition in the steel slag. Steel slag contains considerable amount of Iron Oxide and Calcium Oxide. In the process of extracting the valuable element, leaching tests have been developed. Thus, slags can become one of the promising recyclable materials for the purpose on various applications such as waste water treatment, construction and carbon dioxide sequestration instead of being dumped as pollutant which may harm the environment. This paper presents a review of the common utilization of the steel slag.

Keywords: Slag, Material Characterization, Leaching, Element, Utilization

AIMC-2018-STEM-464

BUILDING AN ARABIC EMAIL CORPUS

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Abstract

There are many large dataset have been assembled in the last years, Arabic language lacks sufficient resources in this field, there is no Arabic email dataset made to be used in spam classification studies, there is an urgent need to fill this gap. To solve this problem, we have builded an Arabic email corpus, it contains spam and non-spam emails, the total of this corpus is 1066 messages, 512 spams and 554 non-spams. The aim of this corpus is to meet the needs of Arabic Email classification corpora, at the same time to be beneficial to spam applications developers.

AIMC-2018-STEM-465

PASSENGERS' SATISFACTION TOWARDS RAILWAY FACILITIES (RAILQUAL): A STUDY IN THE CENTRAL REGION

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Abstract

Satisfying passenger according to their perception and expectation, will bring positive word-of-mouth, indirectly can attract more citizen in Klang Valley to take railways transport, since traffic congestion is a major issue faced by most citizen in this area. Rail transportation such as Light Rapid Transit (LRT), Monorail, Mass Rapid Transit (MRT), Keretapi Tanah Melayu (KTM), and Airport Rail link are one of the medium to reduce traffic congestion. However, incompatible railway facilities like lower level of cleanliness, insufficient facilities provided in idle station, inefficiency of vending machine, and inadequacy of parking facilities will discourage people from choosing rail service as their transportation mode. This study identifies the dimensions of service quality that contributes to passenger satisfaction and determine the significant relationship between RAILQUAL and passenger satisfaction in Klang Valley. A comprehensive study has done to identify the related RAILQUAL dimensions that contributing to passenger satisfaction, which includes Reliability, Assurance, Tangibles, Empathy, Responsiveness, Comfort, Convenience, and Connection. A quantitative research has been conducted with 600 respondents that travel by trains in Klang Valley. Correlation coefficient method has been used to evaluate the significant relationship between RAILQUAL dimensions and passenger satisfaction. The most significant relationship with passenger satisfaction is Assurance dimension. Multiple Regression Analysis conducted to test the relationship between RAILQUAL and passenger satisfaction which resulted Assurance, Empathy, Comfort, Convenience, Connections, Responsiveness to be significant significantly related while Tangible and Reliability dimensions show no significant relationship between the variables. As a result, a better facilities management should take into consideration on the service quality provided in the railway station as it plays a vital role in encouraging citizen towards its services which eventually could overcome traffic congestion and contribute towards sustainable transportation in country.

Keywords: Passenger satisfaction; RAILQUAL; Facilities management

AIMC-2018-STEM-478

INTRUSION DETECTION IN THE COMPUTER NETWORK TRAFFIC USING EWMA CONTROL CHART AND ARTIFICIAL NEURAL NETWORK

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Abstract

Industrial computerization for manufacturing and services systems requires a concrete administration because of sophisticated and systematic intrusions to interrupt the production and service systems. There is need to conduct intrusion detection research using control charting technique based on computer network traffic data source. In this study, traditional EWMA control charting technique and ANN pattern classification technique are proposed to detect intrusion into the computer network based on network traffic data. The benchmark dataset

“KDDCUP99” was used for investigation on the intrusion by DoS attack category. The attack was detected at anticipated ARL of 3 or 4 using EWMA control charting techniques through selected feature set. With ANN pattern classification, the accuracies of detection were around 80.7-82.25%. Further research may investigate new attack categories and consideration of other feature sets.

Keywords: Intrusion detection system (IDS), EWMA control chart, ANN, denial of service (DoS) attack, network traffic data

AIMC-2018-STEM-480

NUMERICAL MODELLING OF A NEWLY MULTIPLE TUNED MASS DAMPER FOR ATTENUATION OF BUILDING SEISMIC RESPONSE

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Abstract

A single Tuned Mass Damper (TMD) can only suppress vibration of the assigned mode shape of a structure while for controlling multimode vibrations, Multiple Tuned Mass Damper (MTMD) is needed. In this study, mathematical modelling & numerical evaluation of the proposed MTMD as a vibration suppression mechanism is performed comprehensively by transforming structural model into equivalent lumped mass-spring-dashpot system with consideration of hypotheses Rayleigh damping. The main structural model is designed as a linear time-invariant system which the equations of motion were derived using transfer function and further simplified in state space representations to cater the analysis complexity. The time history & frequency response analysis of this study including the vibration control effect of attaching the MTMD to a multi-story structure due to both transient and ground excitation input. A single TMD is first been designed to be tuned according to different mode shapes of uncontrolled structure. The influence of parameters such auxiliary mass ratio, optimum damping ratio, and optimum frequency ratio is been identified numerically and the performance of structural control mechanism been analyzed for both single TMD and MTMD arrangement. The optimal placement algorithm of control devices is also justified using defined objective functions purposely to maximize system effectiveness and the robustness of the proposed mechanism in terms of the distribution of natural frequencies MTMD for different seismic input. The result shows that the optimization of TMD parameters satisfied both displacement & acceleration objectives. It is also proved that the optimization method significantly contributed to the overall reduction of structural response.

Keywords: Tuned Mass Damper; Equivalent Damping Ratio; Rayleigh Damping; Optimization Method

AIMC-2018-STEM-484

EFFECT OF PREDICTORS SELECTION ON QUALITY PREDICTION OF REFINED PALM OIL

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Abstract

A challenging problem in the quality prediction is the process variables selection. In particular, some of predictors may be weakly correlated with the output variables and others may be essentially redundant in that they are highly correlated with some of the other predictors. Hence, this article want to propose a process variables selection method that give a proper sense on which predictors should be included and which excluded for the purpose of reducing the prediction error. In proposed procedure, two stages of Multivariate Statistical Process Control (MSPC) methods namely Principal Component Analysis (PCA) and Principal Component Regression (PCR) are used. Initially, PCA is applied to select the optimum number of process variables based on the dimension reduction. Then, the relationship coefficient between the process and output variables is developed using PCR method for quality prediction model. The types of predictors included are determined based on the ranking of relationship coefficient. The developed relationship coefficients of selected process variables are further used to predict the Refined Bleached Deodorized Palm Oil (RBDPO) quality from the feed Crude Palm Oil (CPO) quality and the refinery operating variables. The performances of quality prediction based on the number selected variables for all predictors are compared. Through validation with the online data, the usage of selected predictors gives smaller prediction error.

Keywords: Variable Selection; Multivariate Statistical Process Control; Quality Prediction; Palm Oil

AIMC-2018-STEM-491

COMPARATIVE ANALYSIS BETWEEN NET AND GROSS METERING BASED FEED-IN TARIFF FOR RESIDENTIAL PV SYSTEM

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Abstract

In this study, regarding the Malaysian Monopoly electric market, a comparative assessment of Net and Gross metering scheme for residential PV system is carried out. The study evaluates two different load profiles of two different residential houses for fixed rooftop PV system capacity. The analysis is performed by using Homer software. The importance of this study is to decide which metering system is better to use in Malaysia. The Decision of most efficient metering system to use in Malaysia will be chosen according to the effect of financial factors like payback period, NPC

(Net Present Cost) and COE (Cost of Electricity). The comparative results indicated that Gross metering was preferable for Malaysian house whereas Net metering was preferable for European house.

Keywords: FiT scheme, Net & Gross metering system

AIMC-2018-STEM-494

INDEXING PXRD STRUCTURAL PARAMETERS OF GRAPHENE OXIDE-INCORPORATED METAL-ORGANIC FRAMEWORK.

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Abstract

CO2 is the primary anthropogenic contributor to climate changes. It is estimated that approximately 30 Giga-tonnes of CO2 is generated per year of which one-third is equivalent to the total emissions of other greenhouse gases. As a response to these global issues, the development of CO2 adsorbents has been vastly conducted these recent years. A magnesium-based metal-organic framework (MOF), Mg-MOF-74, has been denoted as a landmark of its kind due to strong metal adsorptive sites. However, large void spaces in the framework is not fully utilized due to weak surface dispersive forces. This recent works intends to improve CO2 adsorption of the existing Mg-MOF-74 by enhancing MOF porosity and nanostructure. Two carbonaceous agents, graphene oxide (GO) and multiwalled carbon nanotubes (CNT), were used to enrich the original structure. Mg-MOF-74@GO and Mg-MOF-74@CNT composites were synthesized under solvothermal reaction and characterized by N2 adsorption, SEM, XRD, FTIR and RAMAN. The carbonaceous agents were introduced into the framework by in-situ synthesis of ‘bottle-around-ship’ (BAS) method to form sandwich-like structure. The insertion of both GO and CNT were confirmed under SEM morphological analysis. The profiles of XRD, FTIR and RAMAN showed that the crystalline structure of Mg-MOF-74 was well preserved and not ruptured by the presence of GO and CNT. CO2 adsorption equilibrium was measured under Advanced Free Space Measurement (AFSM) method at 1 bar and 298K. The composites exhibited a 50% and 22% addition in CO2 storage capacity compared to the pristine Mg-MOF-74 with an insignificant percentage of substitution (0.3 wt%) of GO and CNT, respectively. The encouraging result was supported by the increase in specific surface area of 77% and 99% respectively for Mg-MOF-74@GO and Mg-MOF-74@CNT. The outcome of this research is believed to provide a brighter future to the world of porous materials in CO2 capture.

Keywords: CO2; Adsorption; Metal-organic framework; Mg-MOF-74; Graphene oxide; Carbon nanotubes

AIMC-2018-STEM-497

RESEARCH ACTIVITIES IN INDUSTRY 4.0 FUNCTION AS ENABLERS FOR AGILE MANUFACTURING IMPLEMENTATION

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Abstract

Agile manufacturing is a concept to improve the competitiveness of manufacturing organizations by integrating customer and manufacturer in various processes; for design, manufacturing, sales and marketing and other services. All these information could be used in decision making process at an operation level to provide modular production facilities. The success of agile manufacturing depends on the consistent effort of an organization to integrate and maintain well informed smart system in all the domains, starting from product development stage to customer services and to overcome limitations. Industry 4.0 apply latest and future oriented communication technologies to establish a smart factory with intelligent manufacturing system. This research analyses the partly perceived linked between agile manufacturing and industry 4.0, and examine whether industry 4.0 is capable of implementing agile manufacturing. Literature review of both concepts agile manufacturing and industry 4.0 are studied first to present general and broad definitions and other dimensions followed by reviewing key enablers in implementing agile manufacturing. Researchers in this paper endeavor to identify the aspects of associated technologies of industry 4.0 towards the implementation of agile manufacturing.

Keywords: Agile Manufacturing, Industry 4.0, Key enablers, Virtual Enterprise, Cloud based smart system, Implementation

AIMC-2018-STEM-499

EFFECT OF CONTACT AREA TO IMPACT NOISE

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Abstract

Drill impact driver is commonly used for the purposes of drilling and screwing. To operate, a large amount of torque needed to be produced. Larger torque will exert bigger working power, thus increasing the efficiency of the performance of the driver. As there are many types of drill impact driver, the one that exerted the highest torque is by using a direct impact mechanism between the anvil and the striker. The combination of the spring and gearing system will provide the highest forward-trust torque. However, this combination of impact mechanism generates the highest noise comparing to other drill impact that only uses either gear system only or the mechanism do not have direct

contact and are damped with special fluid. Therefore, a study of relationship between the areas of impact to the sound pressure level is needed to be done in order to achieve the optimum surface area of impact that generates the lowest sound. Microphone 01dBA SOLO Sound Level Meter (SLM) and Dewesoft software are used to capture and analyse the noise data of the drop impact of five aluminium cylinders with different impact area towards its respective sound pressure level.

Keywords: contact; impact noise; area; impact area

AIMC-2018-STEM-503

INTERACTION AND PERFORMANCE ANALYSIS OF QUARTERNARY ALKANE DISTILLATION COLUMNS SEQUENCE

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Abstract

The aim of this research is to present the application of a framework for the controllability analysis of distillation column sequences for the separation of a four-component mixture, which in this case consists of n-hexane, n-heptane, n-octane, and n-nonane. To perform the study and analysis, a framework that consists of four hierarchical stages was developed. In the first stage, sequences for the separation of a four-hydrocarbon mixture were synthesised. In the following stage, MATLAB was used to calculate relative gain arrays (RGA) to determine the interactions between the sequences’ control loops. In the third stage, the distillation column sequences were simulated dynamically and finally, the control loops’ performance was determined in terms of settling time and average ISE error for set point tracking and disturbance rejection. Through the analysis, it can be concluded that the sequence with the least control loop interaction is the direct-indirect sequence, where the diagonal elements are 1.000 and 1.0241. The sequence with the best controller performance and fastest settling time is the direct sequence, with an ISE error of 4.542 and a settling time of 3662.5 minutes.

Keywords: Aspen HYSYS; MATLAB; Relative gain array

AIMC-2018-STEM-504

EFFECT OF ALKALI AND ALKALINE EARTH METALS REMOVAL USING CHELATING AGENT ON PYROLYSIS OIL COMPOSITIONS FROM STEPWISE PYROLYSIS OF PALM KERNEL SHELL

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Abstract

This study investigates the effect of alkali and alkaline earth metal removal using a chelating agent, ethylenediaminetetraacetic acid (EDTA) on pyrolysis oil composition from pyrolysis of Palm Kernel Shell. The method used is staged thermal fractionation or known as stepwise pyrolysis. Stepwise pyrolysis encompasses sequentially increasing temperature steps to decompose biomass based on its main compositions degradation temperature. It is an interesting pyrolysis technique designed to simplify chemical compositions of pyrolysis oil. The staged temperatures are set at T1=0-150°C (30 minutes), T2=350°C (15 minutes) and T3=600°C (15 minutes). The samples are pyrolyzed in a lab-scale fixed-bed pyrolyzer. The alkali and alkaline earth metals (AAEM) content are determined using inductively coupled plasma-optical emission spectrometry (ICP-OES). Pyrolysis oil for each stage are analyzed by gas chromatography-mass spectrometry (GC-MS), and the concentration (area%) of chemical compound distributions is determined.

Keywords: Stepwise pyrolysis; Palm kernel shell; Chelating agent; AAEM

AIMC-2018-STEM-506

ANALYSIS OF DATA MINING TECHNIQUES FOR DENGUE FEVER PATIENTS IN SRI LANKA

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Abstract

Dengue is a deadly disease that spreads rapidly. The diseases are caused by viruses transmitted by the mosquito. Many people are infected with dengue fever. This disease has become a serious health problem in Sri Lanka. The main objective of the research is to study and present clusters for people affected by dengue fever, according to the categorization of the Regional Director of Health Services (RDHS) office area using data mining techniques. The analysis are taken into account monthly number of affected people in the twenty eight RDHS areas in Sri Lanka. The analysis of clusters is carried out through algorithms of k-means clustering and hierarchical agglomerative clustering. The results show some RDHS areas that have more similarities of people affected by dengue fever over time and how the results of each algorithm are similar. This study will be useful because it wants to identify and further investigate important factors in a particular group in the RDHS area for dengue disease.

Keywords: Clustering, Dengue, Data Mining, Hierarchical Agglomerative, K-means clustering.

AIMC-2018-STEM-507

DEVELOPMENT OF PORT INFRASTRUCTURE MANAGEMENT WITH INTEGRATED PORT CONCEPT IN TANJUNG EMAS SEMARANG, INDONESIA

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Abstract

The port as a marine transportation infrastructure has a very important and strategic role for industrial and trade growth. Tanjung Emas Port Semarang is a large port, in addition to serving passenger and public goods, also serving loading and unloading containers. The volume of freight using containers through the port continues to increase from year to year. However, container service at container is currently experiencing some obstacles that affect the speed of container service. The aim of this study is to analyze the connectivity and feasibility of infrastructure and how to solve it. The analysis is using quantitive approach. The results of this study are expected to find out the feasibility of infrastructure and its solutions in the development of ports that are integrated with industrial zones. Based on the quantitive approach of Tanjung Emas Port has to undergo infrastructure improvements and also based on integrated port.

Keywords: Port infrastructure; integrated port; connectivity; logistics

AIMC-2018-STEM-510

GOLD (AU) CATALYST DEPOSITION FOR SILICON BASED NANOSTRUCTURES GROWTH

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Abstract

Colloidal gold nanoparticles have been applied for years by researchers as a catalyst in synthesizing silicon based nanostructures. Its specific diameter results in a uniformly distributed growth of nanostructures with controllable size. In this research, we deposit colloidal gold nanoparticles with typical diameter of 30 nm on silicon (Si) substrate (100) by using microliter pipette. The substrate was first prepared and dipped in a 0.1% poly-L-lysine (PLL) solution before dispersing the gold colloid onto it for 30 seconds. The morphology result by Scanning Electron Microscopy (SEM) shows that Au nanoparticles formed with good spherical shape and also well-distributed on the subjected area. Electron Dispersion Spectroscopy (EDS) confirmed the existence of Au particles as a catalyst before being proceed for the growth of nanostructures.Colloidal gold nanoparticles have been applied for years by researchers as a catalyst in synthesizing silicon based nanostructures. Its specific diameter results in a uniformly distributed growth of nanostructures with controllable size. In this research, we deposit colloidal gold nanoparticles with typical diameter of 30 nm on silicon (Si) substrate (100) by using microliter pipette. The substrate was first prepared and dipped in a 0.1% poly-L-lysine (PLL) solution before dispersing the gold colloid onto it for 30 seconds. The morphology result by Scanning Electron Microscopy (SEM) shows that Au nanoparticles formed with good spherical shape and also well-distributed on the subjected area. Electron Dispersion Spectroscopy (EDS) confirmed the existence of Au particles as a catalyst before being proceed for the growth of nanostructures.

Keywords: Colloidal gold; Silicon nanostructures, SEM; EDS.

AIMC-2018-STEM-516

IMPLEMENTATION OF FEED IN TARIFF FOR PHOTOVOLTAIC TECHNOLOGY IN LIBYA: OBSTACLES AND REMEDIES

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Abstract

Despite a massive potential for solar energy, Libyan national electrical power system encounters occasional blackouts during peak load periods, particularly in summer. As a practical solution, PV power systems can be used to provide an alternative and renewable source of electrical energy to run private and public properties. At a quantitative level, although there have been PV installations on a small scale, their share in overall Libyan electrical power supply still very marginal. To date, renewable energy projects in Libya face a number of legal, bureaucratic, financial and even cultural issues which need to be considered. The potential of implementing the Feed-in Tariff (FiT) in Libya to expanding the application of PV systems is investigated in this paper. The study was based on Net Present Value (NPV) and pay-back period considering different scenarios and rates of FiT, interest rate, inflation, electricity tariff, and subsidy. The feasibility study was conducted on a 5 kW grid-connected PV (GCPV) designed for a residential building located in Benghazi. The findings of the paper are very important for all key players including the Libyan government, decision-makers, the national grid utility operator, industries, the PV system investor, and also the environment.

Keywords: economic analysis; feed in tariff; Libya; photovoltaic power systems

AIMC-2018-STEM-518

DEVELOP COMPETITIVENESS MODEL IN BUSINESS TO INCLUDE COOPERATION CASE: AN APPLICATION OF GAME THEORY

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Abstract

The present paper is an attempt to analyze and determine whether the cooperation will result in a more superior outcome compared with the competition. Cooperation has been evidenced to assist in achieving optimum outcome depending on the way companies value their future rather than their present. This factor is the most significant one among all factors which have to be taken into consideration. Telecommunication companies in Iraq are experiencing a huge competition in the market nowadays. Each company is striving to attract more customers by providing satisfactory and competitive services. Game Theory, which is one of the operational research modeling techniques, is selected in this study then it is used to evaluate the performance of a number of telecommunication companies in Iraq after reconstruction. This research is set out to analyze the competition models of two Iraq's telecommunication companies (Asia Cell and Korek) which are used as a case study. This is achieved by studying the strategies (services) offered by each company, and formulating a payoff matrix of competition between these companies, and then the expected optimal value is shown below. By using the optimal value, it is possible to develop the competitiveness model to study the cooperation case between these two companies.
Keywords: Cooperative, Game Theory, Operations Research, Sustainability, Telecommunication Industry.

AIMC-2018-STEM-522
DESIGN AND ANALYSIS OF ANGIOGRAPHY HAND REST
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Abstract
The arm board for radial cardiac catheterization is being used in order to position properly the patient’s arm to ease the procedure and provide comfortability for the patient during the angiography procedure. This project will focus on the development of the new design concept of radial arm board through study and understand current radial cardiac catheterization arm board as well as design, develop, analyse and fabricate a prototype that will improve current radial arm board in angiography procedure. Data gathering is done through literature review and discussion with the doctors and nurses to collect the disadvantages or drawbacks of current radial arm board. Then the development and analysis of the new design concept in the Solidworks and fabrication of a prototype for simulation in the angiography procedure. Most of drawbacks of current radial arm board are eliminated during design concept and it will be another alternative product that can be chosen despite of the expensive imported brand in market.
Keywords: arm board; radial cardiac catheterization; angiography;Solidworks

AIMC-2018-STEM-530
DESIGN OF ENERGY EFFICIENT MULTI EXTRACTIVE DISTILLATION COLUMN FOR CYCLIC MIXTURE
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Abstract
Past literatures only focused on design of separation system for specific type of mixture. For example, azeotrope mixture usually was designed from binary feed. However, what will happen if the feed mixture contains other component which are also difficult to separate such as close boiling point mixture. Hence, the aim of this paper is to design an optimal separation system which consists of both close boiling point and azeotrope mixture. The short-cut method commonly used in designing distillation columns is not suitable for separating close-boiling point or highly non-ideal mixtures. So a driving force design method was employed to design optimal ordinary and extractive distillation using a case study of aromatic compounds (Methylcyclopentane (MCP), Benzene, Methylcyclohexane (MCH), Toluene, m-Xylene and o-Xylene) obtained from a literature (Zaine et al., 2015). Zaine et al., (2015) applied the driving force method to determine the sequence for the separation of the aromatic mixture, however, the individual columns were designed using the short-cut method. Design using short-cut method will lead to infeasible number of stages and huge reflux ratio. Hence, this study will apply both sequencing and designing using the driving force method to compare the existing design with the proposed design to determine which design has better results in energy and economic point of view.
Keywords: Azeotrope mixture, Close boiling point mixture, Cyclic mixture, Driving Force method, Economic analysis

AIMC-2018-STEM-538
THE MODERATING EFFECT OF DESIGN MANAGEMENT ON THE RELATIONSHIP BETWEEN INNOVATION AND BUSINESS PERFORMANCE OF PRODUCT MANUFACTURING INDUSTRIES IN MALAYSIA
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Abstract
Due to the growing significance of design and innovation to human beings in particular and business performance in general and business performance in particular, it is vital for the product manufacturing industries to keep pace with the rapid vicissitudes of the economic model and technology that the world is heading towards. The main aim of this

study is to determine the moderating effect of design management on the relationship between innovation and business performance of product manufacturing industry in Malaysia. The study obtained the data from 500 employees from product manufacturing industries in Malaysia. Furthermore, the study employed Confirmatory Factor Analysis (CFA) and Partial Least Square Structural Equation Model (SmartPLS SEM) and analyzed the data collected from the survey. The result of the study revealed that design management has positive and significant moderating impact on the relationship between innovation and business performance. This indicated that is very important to the product manufacturing industries to understand the external factors like communication, competency, basic skills, and planning so as to increase the business performance. The study recommended that the product manufacturing industries should ensure that all the design factors and innovation factors should be maintained and enhanced to meet the industries’ expectations about their product. Furthermore, product manufacturing industries should regard the role of design management plays in developing the business performance.
Keywords: Design Management; Innovation; Business Performance; PLS-SEM

AIMC-2018-STEM-551

ACTION RESEARCH TO IMPROVE STUDENTS' PROBLEM SOLVING USING MULTIPLE MODES OF REPRESENTATION

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Abstract

Physics students, especially those who are newly introduced to the subject, usually face difficulties in solving real life problems because of most of them are unable to make the accurate mental representation of the problems. This action research aims to improve a teacher’s classroom instruction to develop students’ problem solving skills by incorporating the use of multiple modes of representation. A class of 30 Form 4 students from a secondary school in Johor, Malaysia involved in the research. A pre-test and a post-test were given to the students to measure their level of achievement in Physics problem solving and the use of representations. Mean scores obtained from the tests were analysed and the result showed that there is a significant increment ($p < .05$) for the achievement in problem solving before and after the instructions. However, a Pearson correlation analysis indicates that there is no significant relation ($p > .1$) between the scores on representation and achievement in problem solving. The implication of this research is that instructors must develop a new plan of action to enable the students to use representations in problem solving. Further research must be carried out to investigate whether a new course of action can improve the result in improving the problem solving skills for Physics students using multiple representations.
Keywords: physics education, problem solving

AIMC-2018-STEM-552

STUDENT SELF-REGULATORY LEARNING ON PHYSICS IN HIGHER EDUCATION INSTITUTIONS

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Abstract

This study aims to identify the level of self-regulated learning between high achieving and low achieving students in physics at a university in Malaysia. This study involved the first and second year students of pure physics totaled of 70 students. The instrument used is the Self-Regulatory Strategy Inventory (SRSI). The student’s self-regulatory learning level was assessed based on self-regulated learning theory (SRL) with three constructs: environment, self-esteem and behavior. In general, high achieving students shows high mean scores in the SRSI but the differences are not significant. Nevertheless, self-regulated learning plays an important role for students in learning and achievement of physics.
Keywords: physics education, self regulated learning

AIMC-2018-STEM-557

OPTIMIZED PDMS SCATTERING LAYER FOR LIGHT MANAGEMENT IN FLAT SURFACE SOLAR CELL

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Abstract

Light management is Solar cell is of crucial importance in Solar cell. As enhancing the number of photons reaching absorber material will enhance short circuit current density and conversion efficiency. Additional scattering layers on Solar cell is showing its superiority over conventional ARCs for solar cell with flat surfaces in terms of reducing Fresnel reflection losses and light trapping. PDMS scattering layer with random pyramids optical losses of flat surface Silicon by18.8 percent (absolute) while isotexture and inverted pyramids shows decrease of by 15.72 percent and 14.42 percent respectively in weighted average reflectance in Visible –Near Infra-Red region. In this contribution parasitic losses incurred by these scattering layers were analyzed by varying thickness of these layers. Layers with thickness more than 100 um were fabricated as well as simulated, while less than 100um were only simulated. The optimized layer was obtained for thickness of 100 um having parasitic losses of 0.5 percent for single path length tested on flat Silicon device.
Keywords: Materials Engineering, Green and Sustainable Technologies, Renewable Energy

AIMC-2018-STEM-563

LEAN ANALYSIS OF WASTE IN LAUNDRY SERVICES TO DEVELOP THE IMPROVEMENT USING 5S AND SVSM

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Abstract

Small and Medium Enterprises (SMEs) is one of the important industrial sector that contributes in economic growth, innovation and employment of the country. Service industry has been developed dramatically in this decade such that this state causing an increase competition in the market. Thus, most of SMEs should improve their service system to sustain in competition. Laundry service is a part of SMEs which is growing rapidly in conjunction with arising sector of tourism, hotel, hospital, and housing industry. The shortcoming of this business is their inability to meet the customer satisfaction that causing complaint from the customer. This is the main problem in service industry. The objective of this study is to investigate some causes of the service problems in laundry as well as recommend an improvement that should be done. Lean concept is implemented as a basic to analyze a waste of service activity. Service Value Stream Management (SVSM) and 5S (Sort, Set in order, Shine, Standardize, and Sustain) are applied to find some recommendation of improvement to reduce the waste. Paper based survey was conducted to identify type of waste and root causes of waste. Statistical analysis was used to test the initial data. The result of this study show that there are three type of waste that happens in selected SME. They are overproduction, lack of standardization, and failure demand. The expected recommendation will be provided to improve the service.

Keywords: SMEs; Service Industry; Lean; 5s; SVSM.

AIMC-2018-STEM-566

MEASURING THE NIGHT SKY BRIGHTNESS FOR TROPICAL REGIONS A COMPARATIVE STUDY BETWEEN NIGERIA AND MALAYSIA USING ENVIRONMETRIC AND GIS TECHNIQUES

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Abstract

High anthropogenic activities are rapidly increasing nowadays. It is assumed to have global implications which are not a matter that affects astronomy and their observational activities, but also has adverse to our environment. Malaysia and Nigeria have high anthropogenic activities rapidly increase above the standard especially the lighting sources. This light pollution increases due to the large growing of industries, residential and commercial uses, which can make the night sky brightness in the area above the threshold set for polluted status. We measured the night sky brightness at the near urban centers of the study areas; to quantify the level of the night sky brightness. The study monitored the zenith sky brightness from November 2015 to March 2016 using Sky Quality Meter (SQM). However, typical values ranging from 20.14 to 22.00Mag.sqm /arc sec.2 were measured for Nigeria. Conversely, in Peninsular Malaysia, the values range from 18.68 to 21. 00Mag.sqm /arc sec.2. The data was analyzed using Agglomerative Hierarchical Method to cluster according to the pollution status. The result showed three groups: low pollution; moderate and high pollution status for Nigerian data. The sites classified in 3 are more polluted when compared to the others because of the high use of artificial light sources in the areas. Hence, for Peninsular Malaysia, the result classified as cluster 2 has the least pollution status, cluster 1 as moderate and cluster 3 as high polluted sites. However, GIS software was employed to confirm the results obtained from environ-metric technique and concluded that this result is confirmed to be the same. The correlation analysis was run to determine the association between the sky brightness of these two nations. The result illustrated that there is an insignificant relationship between them in which the r value was found to be 0.2921 at 0.05 significant levels.

Keywords: Sky glow; Sky Quality Meter; Light pollution; Cluster analysis; Correlation; Artificial Light at Night

AIMC-2018-STEM-568

BEHAVIOR AND STRENGTH OF COMPOSITE PUSH ? OUT SEGMENTS WITH DEMOUNTABLE STUD SHEAR CONNECTORS

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Abstract

The present study is an attempt to determine the mechanical properties of the demountable headed studs used as shear connectors in steel-concrete composite systems through evaluating the behavior of such systems. Hence, this work is exposed to experimental investigation on the behavior of standard push-out prototypes provided by demountable headed studs of various states and fashions in comparison with the behavior of a standard push-out prototype furnished by the traditional base-welded headed stud. The effects of five parameters covered by the eight push-out prototypes are examined in this work. They are the degree of rigidity of the junction interconnecting the stud and the attaching steel element, the size of thread in the shank bottom of the demountable headed stud, the distribution of the demountable headed studs, removal of the head of the demountable stud, and using LWAC for the concrete block. The test result indicate that the degree of the attachment rigidity at base of the demountable headed stud plays the major role in weakening and softening the composite system with condensation of the pattern of fracture mechanism due to the new

colonizing brittle shear fracture at the stud base. Other parameters have also proved to have active diversified effects on the studied responses but of variable subservient degrees. Finally the way to further experimental and analytical work on the performance of composite systems with demountable shear connectors have, thus, become accessible.

Keywords: Stud shear connectors; Demountable headed studs; Behavior standard push; Standard push out; Push out prototypes; Push out prototype; Welded headed stud

AIMC-2018-STEM-569

DESIGN AND INSTALLATION OF CONTROLLED DRIP IRRIGATION

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Abstract

Globally, the agriculture sector is a major consumer of available freshwater. Pakistan is an agricultural country and its major economy depends upon the agriculture sector. In Pakistan, freshwater scarcity rate is high and further increasing due to the lack of proper utilization of the freshwater resources by farmers, which is very detrimental to the economic structure of the country. In such a scenario, controlled drip irrigation system serves the suitable technique to limit the water supplied to the crops at regular interval for agriculture, and replaces the flood irrigation system. Various controlled drip irrigation system has been purposed. Basically, in drip irrigation system, the humidity,moisture and temperature of the crops are monitored and controlled by sensors and actuators. This designed system helps farmers to irrigate their fields in an economical manner with controlled system based on soil moisture sensors. This system is new essential for farmers which saves energy, money and time and will operate when the water is needed to crops. As we know that water is an essential involvement for producing agriculture goods & entire agro-food supply. This study is aimed at designing and installation of controlled drip irrigation system for crop fields at Nasarpur, Sindh, Pakistan. We expect that agricultural sector will become more productive by effectively using the fresh water resources. We can design drip irrigation for large scale projects. Converting ordinary irrigation into controlled drip irrigation may save water but may also result in higher energy use. Converting ordinary irrigation into controlled drip irrigation may save water but may also result in higher energy use.Globally, the agriculture sector is a major consumer of available freshwater. Pakistan is an agricultural country and its major economy depends upon the agriculture sector. In Pakistan, freshwater scarcity rate is high and further increasing due to the lack of proper utilization of the freshwater resources by farmers, which is very detrimental to the economic structure of the country. In such a scenario, controlled drip irrigation system serves the suitable technique to limit the water supplied to the crops at regular interval for agriculture, and replaces the flood irrigation system. Various controlled drip irrigation system has been purposed. Basically, in drip irrigation system, the humidity,moisture and temperature of the crops are monitored and controlled by sensors and actuators. This designed system helps farmers to irrigate their fields in an economical manner with controlled system based on soil moisture sensors. This system is new essential for farmers which saves energy, money and time and will operate when the water is needed to crops. As we know that water is an essential involvement for producing agriculture goods & entire agro-food supply. This study is aimed at designing and installation of controlled drip irrigation system for crop fields at Nasarpur, Sindh, Pakistan. We expect that agricultural sector will become more productive by effectively using the fresh water resources. We can design drip irrigation for large scale projects. Converting ordinary irrigation into controlled drip irrigation may save water but may also result in higher energy use. Converting ordinary irrigation into controlled drip irrigation may save water but may also result in higher energy use.

Keywords: Drip Irrigation;Arduino Control;Water Management;Soil moisture sensor

AIMC-2018-STEM-575

INVESTIGATING POTENTIAL GREEN MATERIALS TO IMPROVE COST EFFECTIVENESS FOR LOW-COST BUILDING CONSTRUCTION IN NIGERIA

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Abstract

Developing countries are facing greater and pressing challenges to provide adequate shelters. Nigeria is presently facing a shortage of about 17 to 20 million housing deficit. The aspiration of owning a house by the low-income and middle-income families is becoming a difficult reality and need innovative solution. Thus, it has become necessary to adopt cost-effective, innovative and environment-friendly housing technologies for the construction of houses and buildings for enabling the common people to construct houses at affordable cost. Therefore the study review and analyze potentials green materials such as earth bricks, bamboo, timber, stone walls, and thatches suitable for low-cost building constructions. This result reveals that about 16.67% to 67.99% of the construction materials can be saved by using innovative green materials such as adobe bricks and bamboo respectively. It can be concluded that green materials are cost effective and sustainable for low cost building construction.

Keywords: Low-cost building construction, green materials, cost, effectiveness, Nigeria.

AIMC-2018-STEM-580

SEEPAGE ANALYSIS OF SATPARA DAM PAKISTAN

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Abstract

The embankment dams or fill-type dams are constructed of earth and rock-fill material respectively. The earth-fill dams are self-effacing structures which can avert the overturning and sliding because of their self-weight. The failure of earth-fill dams is attributed to the following: seepage failure, hydraulic failure, structural failure, piping through dam body, and due to the earthquake. This research is carried out on Satpara dam. It is an earthen dam which is situated in Skardu (Pakistan) having a length of 1400 ft and a maximum height of 128 ft, built on ground moraines and alluvial soil. Due to the nature of strata, it has serious seepage problems. An embankment has also breached due to the seepage problem. Although, upstream side is provided with an upstream blanket, which is almost 600 ft long and a cutoff, which is almost 25 ft in the foundation. Therefore, this research is built on seepage analyses through the dam using GeoStudio SEEP/W software and compared the numerical value of electricity production by incorporating the effect of seepage on the production of electricity during the whole year and also some measures are suggested to counter the seepage and increase the production of electricity.

Keywords: Satpara dam; Earthen dam; Seepage analysis; GeoStudio SEEP/W

AIMC-2018-STEM-583

IMPACT RESISTANCE BEHAVIOR AND DAMAGE CHARACTERISTICS ON LAMINATED COMPOSITES MATERIALS

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Abstract

The aim of this study is to investigate the impact resistance and damage characteristics of laminated composites with different layers of fabric at low velocity impact tests. Woven fiberglass fabric was selected as reinforcements for the laminated composites. Impact tests were conducted using drop-weight impact test with a constant energy at 20 J and velocity 3.4922 m/s. Hand lay-up technique was used to fabricate the composites.

Keywords: Laminated composites; Impact resistance; Damage mechanisms; Fiberglass; Low-velocity

AIMC-2018-STEM-584

A KINETIC STUDY OF VAPOR PHASE HYDRODEOXYGENATION OF A BIO-OIL MODEL COMPOUND OVER PDFE/AL-MCM-41 CATALYST

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Abstract

The lignocellulose biomass resource can be used not only as direct energy in combustion, but also as a more valuable fuel after conversion and upgrading process. Fast pyrolysis is an approach that produces bio-oil from biomass. However, it is very difficult to directly utilize the pyrolysis oil because of the presence of oxygenated compounds (e.g., acids, esters, alcohols, ketones, furans and phenols). Hydrodeoxygenation (HDO) is a prominent process to upgrade bio-oil. The HDO experimental and kinetic study were conducted using PdFe/Al-MCM-41 catalyst in a tubular fixed-bed reactor. Kinetic model was proposed and applied to 21 reaction pathways, 13 compounds. The detailed reaction pathways of HDO of guaiacol and their reaction rates were clarified for a PdFe catalyst. The major pathway of HDO of guaiacol is direct production of phenol and then benzene. The detailed kinetic model is an effective tool to estimate the major reaction pathways of HDO process.

Keywords: kinetic model; hydrodeoxygenation; bio-oil upgrading; bimetallic; HDO

AIMC-2018-STEM-585

DESIGN FOR MANUFACTURABILITY (DFM) OF 3D PRINTED PARTS FABRICATION USING OPEN SOURCE 3D PRINTER

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Abstract

Fused deposition modeling (FDM) is one of the famous additive manufacturing (AM) techniques to fabricate the part using layer-by-layer concept. Recently, an open source 3D printer is become widely available used by 3D printer user because it is affordable and portable. In this study, the performance of an open source 3D printer was evaluated based on the dimensional accuracy of the printed parts. The test model was fabricated using two types of printer, which is low cost 3D printer, Prusa and mid-end 3D printer, Cubepro. Then, the dimension of every test structure was measured using Rexxcan 3D laser scanner and was compared.

Keywords: Fused deposition modeling (FDM); 3D laser scanner; dimensional accuracy

AIMC-2018-STEM-586

COMPUTER SIMULATION ANALYSIS FOR PRODUCTIVITY IMPROVEMENT OF HEATER MANUFACTURING PRODUCTION LINE: A CASE STUDY FOR WELDING UNIT

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Abstract

Firm’s efficiency and competitiveness are two important challenges in today’s global market that have motivated many manufacturing firms to plan novel manufacturing management strategies. Nowadays, simulation models have been used to assess different aspects of manufacturing systems. This paper introduces a welding unit of a manufacturing line of heater production as a case study and the basic application of the ARENA software. The main goal of this paper is increasing the productivity and efficiency of the line by using precise simulation. To achieve this goal three various alternatives are developed and suggested to obtain the better improvement in productivity.

Keywords: Heater Industry, Welding Unit, Manufacturing System, Productivity, ARENA

AIMC-2018-STEM-589

OPTIMIZATION OF IONIC LIQUID ASSISTED SUGAR CONVERSION AND NANOFILTRATION SEPARATION FOR 5-HYDROXYMETHYLFURFURAL

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Abstract

5-hydroxymethylfurfural (HMF) has been identified as potential platform intermediate for future chemicals. This paper provides complete loop, associated with ILs assisted glucose conversion, nanofiltration based separation and recyclability of IL. The yield of HMF was optimized using response surface methodology (RSM). The effect of catalyst loading, reaction temperature and time on HMF yield was studied. The optimum HMF yield i.e. 65.6% was obtained with catalyst loading: 8%, reaction temperature: 125°C and reaction time: 120 minutes. The calculated activation energy at four different heating temperatures for conversion was 120 kJ/mol. Humin, formic acid and levulinic acid as side products, were also quantified. For efficient separation, the membrane nanofiltration (NF) system was adopted first time to separate IL and generated HMF. The purity of regenerated IL and HMF, obtained from NF and liquid-liquid extraction, was confirmed by NMR spectroscopy.

Keywords: ionic liquids; nanofiltration; conversion; 5-hydroxymethylfurfural; response surface methodology

AIMC-2018-STEM-592

HERITAGE BUILDING INFORMATION MODELLING: ENHANCED APPROACH OF ESTIMATION

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Abstract

There are numerous heritage buildings in Malaysia that require conservation because the buildings represent the historical and cultural backgrounds of the country. However, conservation works are associated to costing which are usually estimated by the quantity surveyors. Unlike new construction or building projects, estimation for conservation of heritage buildings are tedious and complicated. This is due to the unique nature of the buildings that demand for different approaches and based on the current state of the buildings, the elements that need to be quantified for estimation purposes are unstandardized. Conventionally, quantity surveyors are required to prepare bills of quantities for the estimation purposes. In order for the bills of quantities to be prepared, quantity surveyors need to manually measure the elements on site which impose difficulties especially in term of health and safety. With the introduction of Heritage Building Information Modelling (HBIM) process and the utilization of 3D laser scanner, this research intends to demonstrate an enhanced approach of estimating and for that, a 150 years heritage building in Johor Bahru is selected as the case study. The findings reveal that HBIM process and utilization of 3D laser scanner are able to enhanced the overall process of estimation of heritage buildings and also to ensure its accuracy. However, this findings should not be generalised to other case studies but it is highly recommended that the principle of this research should be applied to other case studies for further investigation. In conclusion, this enhanced approach of estimation of heritage buildings is significant in producing accurate estimation as well as in promoting better services of quantity surveyors in the forte of conservation of heritage buildings.

Keywords: Heritage Building Information Modelling; Building Information Modelling; BIM; Quantity Surveyors; Estimation

AIMC-2018-STEM-594

HERITAGE BUILDING CONSERVATION: STATE OF THE ART

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Abstract

The rapid development of technology in the construction industry is one of the major catalysts in the economic transformation of the country. With the presence of BIM technology we able to collect data of the ancient building at

the several historic places and also a virtual model of a historic building is digitally built in order to maintain the whole building through its entire lifecycle and as well as demolition. This virtual model knowns as historic building information modelling (HBIM) represents a new paradigm with architectural heritage that can be used for creating, conserving, documentation and managing complete engineering drawings and information. BIM radically changed the design and documentation process in AEC industries. Many architects, archaeologists, conservationists and engineers see BIM as a disruptive force, changing the way professionals can document and manage a cultural heritage structure. Therefore, the aim of this paper is to give an overview of the concepts, as well as surveying and representation techniques that are used in HBIM in order to support the process of further integration and demonstrate how the complexity of built heritage resources can be dealt with. In this article, following a brief historic background for the BIM, we reviewed range of software programs that can be used in HBIM and the recent developments focusing in the cultural heritage documentation perspective in order to motivate the opportunity in using this model.
Keywords: Building Information Modelling; BIM; 3D modelling; HBIM

AIMC-2018-STEM-598

EVALUATE THE PERFORMANCE LEVEL OF COMMUNITY COLLEGE GRADUATES FROM THE VIEW POINT OF EMPLOYERS

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Abstract

This study focused on the graduates of the community colleges in Dammam. The goal of the study was to evaluate the performance of graduate of the community colleges from the point of view of the employers also identify the strengths and weaknesses in learning outcomes..The study used questionnaire from two dimensions, first was the general performance and the second was the technical skill of the graduates. The study sample was some managers of some companies and institutions in the Dammam and faculty staff in the college; we analyzed the results using suitable statistical methods .The result showed the performance of the graduate of the community college and measure the learning outcomes of the college. The study provided discussion of the result and some recommendations.

Keywords: Evaluate; community; employer; performance.

AIMC-2018-STEM-603

STRATEGIZING THE COMMUNITY-SCALE OF GREENHOUSE GAS EMISSION INVENTORIES (GPC) FOR LOCAL AUTHORITIES IN MELAKA STATE, MALAYSIA

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Abstract

State level of greenhouse gas (GHG) inventory provide a basis to strategize the climate adaptation and mitigation actions at city level which include the local authorities and individual. The study utilized the 2013 of GHG inventory data in Melaka state which analysed by using the Harmonized Emissions Analysis Tool (HEAT+) for further prioritization analysis based on the scopes and sectors with science-policy based intervention and action. Sector-wise, the top four GHG emitter in Melaka is contributing from industry 39.6% (1,548.412 tCO2e), in-boundary transportation 29.9% (1,160,333 tCO2e), commercial 14.7% (574,844 tCO2e) and residential 12.8% (499,655 tCO2e). The GHG emissions source reveals 72.1% are coming from inside of Melaka boundary (Scope 1) and only about 0.51% are from outside (Scope 3). Based on the grid electricity, about 60% or 2,332 tCO2e resulted from electricity consumption and GHG Emissions in the buildings owned by the Historical Malacca City Council and 27% or about 1,059.6 tCO2e comes from Hang Tuah Jaya Municipal Council. Furthermore, street lighting is found as the largest energy consumption, 43% of electricity consumption, followed by water supply and wastewater treatment. The prioritization of climate mitigation action suggested by adopting green technology i.e. cleaner technology in industry sector, low carbon transport and adoption of green building for the commercial, government and residential building. This supported by installing saving energy light for street lighting was suggested to lower the GHG emission. At last, several climate adaptation initiatives implemented to promote environmental sustainability in Melaka.

Keywords: greenhouse gas, emissions, carbon, local authorities, energy, transportation, building, industry

AIMC-2018-STEM-612

DEVELOPMENT OF E-RESOURCES SUPERVISORY BOATS AT THE INDONESIAN MARITIME SECURITY AGENCY

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Abstract

The Marine Security Agency (Bakamla) is an institution that has the authority to crack down on all forms of crime in the Indonesian seas, since 2014 Bakamla established is a manifestation of the realization of the concept of Indonesia as the World Maritime Axis, as a newly formed organization Bakamla very complex role, especially managing resources in 12 agencies. This study aims to develop E-Resource at Bakamla so that it makes it easier to manage the ship owned by 12 agencies in Bakamla which is increasingly growing. The development of E-Resources considers five things: technical feasibility, functionality and reliability, vendor support, supply and licensing. The method used is waterfall and object-oriented analysis of UML (Unified Modeling Language) such as Use Case Diagram, Sequence Diagram,

Activity Diagram and Class Diagram, and programming language used is PHP and MySQL database. This study facilitates the management of resources managed by Bakamla and the creation of online resources management, transparent and integrated in Bakamla.

Keywords: E-Resources, Bakamla

AIMC-2018-STEM-629

FORECASTING ELECTRICITY CONSUMPTION IN NIGERIA'S COMMERCIAL SECTOR: A LINEAR REGRESSION APPROACH

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Abstract

AbstractThe increasing level of electricity consumption in the commercial sector of Nigeria’s economy calls for accurate and plain understanding of the key variables dictating the electricity consumption profile. Such information is critical to day-to-day electricity market operations, policy formulation as well as the nation’s energy sector capacity planning initiatives. In this paper, some of the notable variables selected from literature were studied in order to ascertain their present influence on the annual electricity consumption in the commercial sector of Nigeria’s economy. The study initially use seven identified variables out of which three, namely rainfall, total electricity delivered and total primary energy, were picked in the course of the optimum variable selection exercise using R software. The data are all annual data frame from 1990–2014. . Electricity consumptions models are then developed and analyzed using multiple linear regression analysis. The model shows high predictive capacity with a mean root mean squared error of 0.04 and a probability value of 2.2 x 10-16. Forecasts made using the developed models yielded reasonable results.

Keywords: Electricity consumption, Commercial sector, Forecasting, Linear Regression, Variables

AIMC-2018-STEM-630

DIFFERENT NUMERICALLY PROBLEM SOLVE BY HOMOTOPY PERTURBATION METHOD

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Ncba&E

Abstract

In this paper, we used the homotopy perturbation method (HPM) to obtain an different approximate solutions of the Cauchy problem using in one dimensional nonlinear thermoelasticity. The comparison of the numerical solutions obtained by HPM with the exact solution shows the efficiency of the method of HPM.

Keywords: Homotopy perturbation method, Cauchy problem, nonlinear thermoelasticity, analytical approximate solution

AIMC-2018-STEM-633

THE ISSUES AND CHALLENGES OF SMALL AND MEDIUM-SIZED CONTRACTORS IN ADOPTING INDUSTRIALISED BUILDING SYSTEM

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Abstract

The construction industry plays an important role in supporting the development of small to medium-sized enterprises (SME) in Malaysia. SME contractors accounted for about 90 per cent while large contractors make up the remaining of only 10 per cent. One of the main issues highlighted by CIDB in Construction Industry Transformation Plan (CITP 2016 – 2020) is regarding SMEs particularly in the issue of the specialisation of SME contractors, especially bumiputera contractors in the area of Industrialised Building System (IBS) remains low. Thus, an exploratory survey was undertaken with 30 samples of respondents to explore the challenges of SME contractors in adopting IBS. The findings from the study revealed that this is due to three (3) main challenges. The challenges faced by SME contractors in adopting IBS are lack of IBS knowledge, lack of financial backup and clients’ preference of conventional method over IBS. The findings will be used for the development of a business model framework for SME contractors.

Keywords: SME contractors, Industrialised building system, issues and challenges, exploratory survey

AIMC-2018-STEM-634

ANALYSIS OF EEG SIGNAL FOR INTERNAL AND EXTERNAL FOCUS IN ARCHERY

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Abstract

Attention is an essential trait of human movement and considered as a cognitive process that allows for the selection of information. The attentional focus can be divided into two types of situations namely the internal focus and external focus. The purpose of the study was to discussed an analysis of Electroencephalograh (EEG) signal that involves internal and external focus instruction before doing archery. The data collection are based on three conditions; before

archery, after receiving external focus instruction and after receiving internal focus instruction. Fourier Transform (FT) technique to filtering the raw data has been used to detect brain rhythm in subject. The results showed that alpha rhythm is the dominant rhythm during of external focus instruction.

Keywords: Electroencephalograph (EEG); Attentional Focus; External Focus; Internal Focus; Fourier Transform (FT)

AIMC-2018-STEM-637

MICROWAVE-ASSISTED CHEMISTRY: PARAMETRIC OPTIMIZATION IN CATALYTIC DEGRADATION OF LIGNIN MODEL COMPOUND WITH IMIDAZOLIUM-BASED IONIC LIQUIDS

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Abstract

A systematic study of parametric optimization effects in microwave-assisted degradation was performed by assessing 37 types of imidazolium-based ionic liquids with lignin model compounds such as guaiacol, dimethoxy phenol, benzyl phenyl ether and phenyl ether based on its catalytic activity and yield of product. A prerequisite setting was established by manipulating selected parameters to achieve the optimized environment for the irradiation reactions. Under optimized condition and through high performance liquid chromatography (HPLC) analysis, it was found that 1H-methylimidazolium chloride ([1H-MIM] Cl) degrades lignin model compounds the most as compared to the rest. (Percentages based on kinetic data and reusability results etc.) Based on the product distributions, a few presumably mechanisms are suggested.

Keywords: Ionic Liquids; Microwave-assisted;Lignin model compounds;Degradation

AIMC-2018-STEM-638

VELOCITY MAXIMUM SPEED ANALYSIS ON BLACKSPOT AREA IN BASUKI ROAD RACHMAD KRIAN - BALONGBENDO SIDOARJO, INDONESIA

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Abstract

The existence of the road Basuki Rachmat Krian - Balongbendo is the liaison Surabaya and surrounding areas. Various types of vehicles through Krian-Balongbendo road with high average speed. The big potential is traffic accidents. This study aims to obtain data analysis of the maximum speed in the road. The methodology undertaken in the form of vehicle surveys through the highway. The result of accident rate (AR) analysis on Basuki Rachmat Krian - Balongbendo highway is 201,155496 JPKP. The accident rate for the blackspot (RSP) area is 11.7072. The free flow speed is 63.36 ≈ 63 km / h. Degrees of Saturation (DS) of 0.351 indicates category A service. Actual velocity obtained is 59.80 ≈ 60 km / h. Black Spot Point is located at Km 2000 - 2500 and 2500 - 3000 located on the street Kemangsen. The black side areas are located at Km 1500-3000 and 4500 - 6000 located on Kemagen Road and Balongbendo Highway. These results can describe actual area conditions for safety driving.

Keywords: traffic accident; balckspot; blackside

AIMC-2018-STEM-641

MAPPING OF TURBULENT ROUND JET USING CONSTANT TEMPERATURE ANEMOMETERS (CTA)

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Abstract

A turbulent round jet comprises different regions and layers which creates a great interest for a rigorous turbulence measurement. This paper is therefore intended to map the measurement regions of the jet for a postliminary Laser Doppler Anemometer (LDA) measurement. Valuable information of a flow can be acquired way faster with constant temperature anemometers (CTA) compared to LDA. A high-resolution measurement was done using a computer-controlled CTA at different downstream and radial positions. The radial profiles of mean velocity and turbulence intensity at each downstream position are presented to show the instantaneous behaviour of the air flow in the jet which will be used as a guidance in distributing the measurement points for a higher resolution turbulence measurement using LDA afterwards.

Keywords: hot wire; turbulent round jet, turbulence intensity

AIMC-2018-STEM-642

STUDY DAILY ACTIVITY OF SAMBAR DEER (CERVUS UNICOLOR) AT DEER PARK LAMTANJONG VILLAGE, ACEH BESAR DISTRICT, INDONESIA

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Abstract

Sambar deer is one of the animals that have many benefits and potentially be cattle future. However, the number continues to decline because to get it is only done by hunting. One of the efforts to save it is conservation. Deer Park Lamtanjong village of Aceh Besar district is one example of ecosystem conservation. The research was conducted from April until May 2015. The purpose of this research is to know the daily activity and dominant behavior done by Sambar Deer. The object of this research is Sambar Deer consisting of 2 males and 3 females in Deer Park of Lamtanjong

Village, Aceh Besar District. Data on daily behavior was obtained through direct observation using animal scan sampling method for 14 days observation. Based on the results of research known behavior in the form of eating, moving, rest, grooming and reproduction. Highest behavior is feeding (47%), move (20%), rest (29%), grooming (3%) and reproduction (1%). The highest eating behavior occurred at 08.00-09.00.

Keywords: Cervus unicolor, Daily Activity, Aceh Besar, Indonesia

AIMC-2018-STEM-649

OPERATION AND EFFECTIVENESS OF REHEAT STEAM TEMPERATURE CONTROL CONCEPT IN SUB CRITICAL BOILER

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Abstract

In sub critical boilers pressure, superheated steam temperature is controlled by means of coordinated feed water flow and spray attemperation. For reheat (RH) steam temperature control, many methods are being adopted namely burner tilt, gas recirculation, excess air and steam bypass as primary control and feed water attemperation is envisaged as emergency control. When the boiler is operated in sliding pressure mode the cold reheat steam temperature is higher compared to constant pressure operation. The adjustment required for maintaining constant reheat outlet temperature is larger in constant pressure operation mode. In general spray is not used for RH steam temperature control for boilers designed for constant pressure operation since the spray quantity required will be large and its impact on plant heat rate. In Europe utility boilers are operated under sliding pressure mode and hence RH steam temperature control by spray is a common practice especially for once-through boilers. This paper deals with the benefits and losses of using spray for RH steam temperature control in lieu of other control mechanisms.

Keywords: Boiler; Sub critical boiler; thermal power plant; reheat steam;

AIMC-2018-STEM-651

THE APPLICATION OF SWAT AND 3D MODELING IN FLOOD RISK AND LAND COVER CHANGE DETECTION AROUND KENYIR LAKE IN TERENGGANU MALAYSIA

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Abstract

one of the anthropogenic intemperance is the modification of natural habitat into the man-made environment, such as agriculture, urbanization mining, lumbering as well as industrialization. The kenyir lake as an artificial lake, attract tourist from all over the world because of its natural beauty sustainable development an eco-tourism attraction. This study will focus on how the natural landscape will be conserved and what is the composition of the land cover surrounding the Lake kenyir. The current issue that course for concern are the changes observed and detected from the land use, land cover (LULC) through the use of soil water assessment tool (SWAT) ArcSWAT 2012. The study area was finally characterized by a delineated watershed, sub-basin parameters for calculation of hydrologic response units (HRUs). this includes the nature and orientation of the slope; digital elevation model (DEM), local soil classification and the land cover found around the environment. The 3D simulation was applied to predict the flow of water from the subbasins and from the lake that drained into a larger body of water toward the river mouth of Kuala Terengganu to empty into the South China Sea.

Keywords: Flood risk, modeling, SWAT, LULC, 3D Simulation

AIMC-2018-STEM-656

PRELIMINARY STUDY ON IMPLEMENTATION OF 1GOVCLOUD AMONG MALAYSIA AGENCIES

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Abstract

The phenomenon of cloud computing technology has been a new alternative to virtual data storage. The use of the physical data center is no longer the preferred option when this technology is very helpful for organizations in reducing the cost of data center operations. Government agencies are also taking advantage of saving these cloud computing operations to complement and improve facilities for the people. This paper emphasizes the implementation of cloud computing introduced by the Malaysian government called 1GovCloud. The purpose is to find out which agency uses the technology and the extent of the use of 1GovCloud among the agencies. A preliminary study was conducted through interviews with officials from MAMPU and telephone interviews with IT officers of the agencies involved. The findings reveal that almost 100 more agencies have used 1GovCloud and 15 of them have shown mixed use between 1GovCloud and regular physical data centers. This study is just part of a preliminary study on the implementation of 1GovCloud among government agencies and the extent of its implementation in Malaysia. It is hoped that this paper will provide some initial insights into agencies using this increasingly high-tech technology.

Keywords: cloud computing; public sector; 1GovCloud; government agency

AIMC-2018-STEM-664

MULTIMODAL EFFECTIVE DIGITAL LEARNING AND IOT REPOSITORIES

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Abstract

Digital library retrieves, collects, stores and preserves the digital information of ages as required for human intellectual and capital development. To achieve this, educational institutions, information and knowledge givers are faced with numerous challenges of carrying everyone on the same page. Media and Data mining must play its roles in disseminating useful information. Data Mining is an emerging technology that envisages pattern, process and various methods of accessing information in large databases. For this purpose, there is need to convert different formats of information such as text, images, video, audio, etc into a form that could enable access to be possible, timely and reliable. This paper attempted to define the term data mining in relation to its usage in driving restructuring in line with Nigeria government restructuring agenda for national and economic development. It also covered different data mining features and standards. The paper explained why it is necessary to implement data mining in Nigerian Libraries with the help of internet repository. The paper will further look into the stages of the data mining development life cycle, emphasizing the need to develop multimedia data mining techniques as standards in the libraries for conversion of multimedia information for global and timely access.

Keywords: Multimedia; Data Mining; Libraries; IoT; Digitization

AIMC-2018-STEM-672

STREETSCAPE ENHANCEMENT FOR SUPPORTING CITY TOURISM DEVELOPMENT

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Abstract

Cities all over the world are facing strong competition in terms of attracting tourists. In tourism specifically, the competitive advantage is determined by services orientation and tourism characteristics of the city. Image of a city and tourist real experience directly impacts tourist satisfaction and selling point for the city. Streetscape design plays an important role in affecting the perception and experience of a city. This article reviews the streetscape enhancement for maintaining and improving Tomohon City’s physical and visual that support tourism development. The community and environmental context, elements and conditions which are investigated and analyzed include 3 main categories: 1. Ecological conditions: natural values, topography, climatic condition, wastes disposal. 2. Community and socio-economic conditions: resources, activity types, community’s craftsmanship, traditions, informal vendors. 3. Cultural values, infrastructure and architectural conditions: urban form, architectural details, visual identity (city visual image), road, pedestrian path and bridge condition, land use, materials, streetscape elements, land values, infrastructure. There are five zones of the streetscape, which are gateway, agricultural land, rest area, residential neighborhood, along commercial corridors and public service area. Some designs of streetscape elements are proposed with concern about maintaining a high quality-built environment, building city identity, highlighting good views, and connecting people to amenities and services.

Keywords: streetscape elements design; tourism development; urban streetscape; Tomohon; Indonesia

AIMC-2018-STEM-676

THE COMPARISON OF EXPONENTIAL GENERALIZED AUTOREGRESSIVE CONDITIONAL HETEROSCEDASTICITY (EGARCH) MODEL AND THRESHOLD GENERALIZED AUTOREGRESSIVE CONDITIONAL HETEROSCEDASTICITY (TGARCH) MODEL ON STOCK RETURN DATA

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Abstract

The most popular economic activities undertaken by society to boost the economy one of them is by investing in shares. In stock investment, the important thing to note is the return of the stock price. In stock return data can be analyzed and forecasted using ARMA model. However, because the stock price return data contains a variant is not constant so it contains heteroskedastisitas nature of the ARMA model is not suitable to forecast stock price returns. Therefore, the GARCH model is used to overcome the heteroskedasticity of the data return. However, in the data return also contains asymmetric properties, GARCH model is not able to overcome such asymmetric properties, so used Model EGARCH and TGARCH to overcome the asymmetric nature of the data return. From the result of stock return data analysis using EGARCH and TGARCH at PT Kobexindo Tractors Tbk obtained the best model for) EGARCH that is ARMA(1,1) EGARCH (1,1) and best model for TGARCH that is ARMA(1,1) -TGARCH (1,3). From both models, the best model determination is based on the value of model forecast accuracy having the smallest MAE, MAPE, and RMSE values. From the analysis results obtained MAE EGARCH value smaller than the value of MAE TGARCH, which is 0.027141 for MAE EGARCH and 0.027476 for MAE TGARCH. In addition, the MAPE value on the EGARCH 65.15299 model is smaller than the TGARCH 66.12102 model. The RMSE EGARCH value is also smaller than the RMSE TGARCH value, which is 0.037719 for RMSE EGARCH and 0.037756 for RMSE TGARCH. So based on the value of forecasting accuracy, the ARMA (1.1) -GARCH (1,1) model has smaller MAE, MAPE, and RMSE values ??than the

ARMA (1.1) -TGARCH (1.3) model. Therefore we get the best model ARMA (1,1) -EGARCH (1,1) in forecasting stock price return.

Keywords: Return, stock price, ARCH / GARCH, asymmetric, TGARCH, EGARCH, forecasting

AIMC-2018-STEM-682

ASSESSMENT OF IRON ORE MINING – CONTAMINATED LAKE IN TASIK PUTERI, BUKIT BESI, MALAYSIA

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Abstract

An ex-mining lake in Bukit Besi, Terengganu, Malaysia has been investigated recently to find out the occurrence of acid mine drainage and heavy metals contamination. Acid mine drainage, a product of weathering (oxidation and hydrolysis) on sulphide minerals has been a major concern in mining industry. Samples at 14 points of surface water and sediments were collected and analysed for physico-chemical parameters such as pH, dissolved oxygen, electrical conductivity, temperature, turbidity, sulphate, phosphate and nitrate. Analysis on selected heavy metals, namely iron, manganese, nickel, zink, copper, cadmium and lead is done using inductively coupled plasma optical emission spectrometry (ICP-OES). This study has revealed that the lake is acidic with pH range from 2.97 to 3.99 (Class IV of the Interim National Water Quality Standard (INWQS)) and with the phosphate concentration ranges from 0.12 to 0.89 mg/L (Class V of INWQS) while temperature, dissolved oxygen, turbidity, electrical conductivity, nitrate and sulphate lies under Class I of INWQS. The iron (Fe) concentrations at the lake water ranges from 1.652 -2.213 mg/L, manganese (Mn) range 8.75 to 9.49 mg/L and lead (Pb) concentration 0.153 to 0.161 mg/L. The level of those three measured heavy metal in the lake water, which is higher than Interim National Water Quality Standard (INWQS) for Malaysia indicates the occurrence of acid mine drainage.

Keywords: Mining; acidic; metal; water sustainability; toxicity; acid mine drainage

AIMC-2018-STEM-685

MECHANICAL PROPERTIES AND MORPHOLOGY CHARACTERIZATION OF COCONUT SHELL POWDER REINFORCED IN ALUMINIUM METAL MATRIX AS HYBRID COMPOSITE

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Abstract

There has been an increase tremendously interest that shifted to investigate composites and reinforcement from natural fibers as composites promising excellent properties. The natural fibers possess low cost reinforcement and eco-friendly environment. Hence coconut shell powder reinforcement are likely to implement to explore the hidden potential to be used in many applications. The reinforcement of silicon carbide, magnesium and different weight percentage of coconut shell powder were made by stir casting technique. In this research, tension test and immersion test were carried out to evaluate the mechanical properties of the composite. While scanning electron microscope and electron dispersive spectroscopy were used to examine phase identification microstructure and surface analysis. Small weight gain of the composites as they were immerse in seawater indicates the reaction of microbiologically influenced corrosion take place. It is supported by the SEM images after run the machine. The SEM studies also show that there was uniform distribution of coconut shell powder in the composite and very good bonding among the matrix and reinforcement. The strength of the composite also increase with the increase weight percentage of coconut shell powder.

Keywords: Coconut Shell Powder (CSP); Natural Fiber; Hybrid Composite; Silica Carbide (SiC).

AIMC-2018-STEM-691

WOMEN AS SKILLED LABOUR: ISSUES, CHALLENGES AND PROSPECTS

Corresponding Author: Masidah Abdul Majid

Abstract

*Women as Skilled Labour: Issues, Challenges and ProspectsMasidah Abdul Majid*a, Wardah Fatimah Mohammad Yusoff b, Abdul Razak Sapian c, INTI International University aUniversiti Kebangsaan Malaysia bInternational Islamic University Malaysia c*Corresponding author Email: masidah.majid@newinti.edu.my AbstractAs an important sector in the economy of Malaysia, the prolong problem of shortage of local skilled labour which the construction is experiencing may affect the sustainability of the sector and impinge it significant roles. Currently, the industry has to import foreign workers in order to fulfil the demand for manual labour. Although the government has implemented various strategy including attracting new entries among local youth so that they can be trained in construction academies, the problem still occurs. It indicates that there is a need now for a new strategy as an alternative to the present approaches. At this instance, the strategy which has not formally being applied in the construction industry of Malaysia is attraction of local women to become construction skilled labour. This paper presents a review on the issue, challenges and prospect for women to be attracted as skilled labour for the construction industry of Malaysia. This paper suggested that there is potential for Malaysian women to become manual trades workers based on the literature findings that women have the capability and was once a significant skilled labour in the construction industry.*

Keywords: skilled labour; construction industry; tradeswomen; foreign workers

AIMC-2018-STEM-692

NULL FILIFORM AND SIMPLE DIASSOCIATIVE ALGEBRAS

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Abstract

The research deals with algebras equipped with two binary operations, where description of null filiform associative and diassociative algebras were presented. Those algebras classified in any dimension over complex field. Some properties of commutative diassociative algebras presented. Proven that simplicity of diassociative algebras is equivalent to simplicity of assocoative one.

Keywords: Associative, Diassociative, null-filiform, simple algebras

AIMC-2018-STEM-699

ENERGY POLICY AND RENEWABLE ENERGIES FOR THE SUSTAINABLE DEVELOPMENT OF MALAYSIA

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Abstract

Malaysia is country that depend on heavily on its exports of oil and is a major producer of palm oil and rubber is the major producer. It has an aggregate region of 330,803Km2 with an expected population of 32 million. The aim of this paper is to describe the various energy policies adopted in Malaysia towards the sustainable energy resources; a more aggressive approach is needed to extensively balance fossil fuel consumption. As Malaysia purely relying on fossil fuel diversifying its energy mix with renewable energy. Despite the challenging economic environment in 2015, the Malaysian economy grew by 5.0% (2014: 6.0%), supported by the continued expansion of domestic demand. Interestingly, our primary energy supply and final energy demand posted a negative growth of 2.5% and 0.8% respectively. This study also discusses the current energy scenario and explores the alternative energy like biomass, solar, wind and mini-hydro energy to ensure reliability and security of energy supply in this country. As a final note, to make the fuel mix for 2020 secure and environmentally sustainable. This paper presents the main sources of alternative renewable energy in Malaysia and its potential as well as the main reasons Malaysia is turning to alternative energy solutions; to fully utilize its renewable energy (RE) resources, fulfill the energy demand in the future and to reduce carbon emissions. The present policy is now focusing National Biomass strategy 2020 Recognize use of biomass waste for bio fuels.

AIMC-2018-STEM-702

STUDY ON COCKLE SHELL AS PARTIAL SAND REPLACEMENT IN CONCRETE

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Abstract

Study on Cockle Shell as Partial Sand Replacement in Concrete ABSTRACT Concrete is widely used in construction industry because of its economical factor and high durability characteristic in the long run. However, the production of concrete involves the use of natural resources such as river sand, mine sand and granite. The continuous demand from the industry on these natural resources will increase in the future which can lead to its depletion. This research investigates concrete’s performance using crushed cockle shell as partial sand replacement towards workability, compressive strength and density characteristics of a concrete. Cockle shell used in this experimental work were crushed to smaller size, been graded as per sand distribution particles and was partially integrated in the concrete mix as a replacement for fine aggregate. A total of six concrete mixtures were developed with varying percentages of cockle shell which replaced river sand by weight from 0%, 4%, 6%, 8%, 10% and to 12%. Control mix using Ordinary Portland Cement was designed to produce concrete with target strength of 30 N/mm2 at 28 days using 1:2:4 mixture. Finding shows that the optimum concrete strength achieved is at 4% mixture that is 36 N/mm2. The said testing samples manage to attain the target strength which is 30 N/mm2. While for workability properties, the mixture is workable for reinforced beam and column casting. However, the properties can be improved by using admixtures such plasticizers. Cockle shell can be the alternative material to a more environmental friendly concrete that uses lower content of natural resources and most importantly, develop the required strength.

Keywords: cockle; concrete; cockle shell; concrete properties; concrete partial replacement

AIMC-2018-STEM-707

STUDY ON FAÇADE SURFACE TEMPERATURE OF RESIDENTIAL HIGH-RISE BUILDING IN PENANG, MALAYSIA CASE STUDY OF JUNE 2017

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Abstract

The study aims to analyze the façade surface temperature of 3 selected residential high-rise buildings in Penang Island, Malaysia. According to most of the building codes, a high-rise building is defined based on the height or the number of the building’s stories. The National Fire Protection Association defines the high-rise building as any building, which is taller than 23 meters (75 ft). There are three apartments selected in the case study. The first case

study is Mutiara Idaman 1 Apartment located in Solok Tengku, Jelutong. Halaman Kristal 1 located in Lengkok Free School, Jelutong is the second selected case study. While the third case study is Baystar located opposite of Queensbay Mall in Bayan Lepas, Penang. To capture the façade thermal images of the apartments’ west façade Fluke Ti20 thermal imager was used, the thermal images were taken in every hour from 12:00 to 6:00 pm on 14th and 15th June 2017. The research finds that Halaman Kristal 1 Apartment has better shading performance than Baystar then followed by Mutiara Idaman 1 Apartment during all evening hours. Shading devices and balconies in Halaman Kristal 1 provide shades on the façade which reduce the surface temperature.
Keywords: High-rise Building; Thermal Image; Fluke Ti20

AIMC-2018-STEM-714

ASSESSMENT OF HEAVY METAL POLLUTION IN STREET DUST OF NICOSIA CITY NORTH CYPRUS

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Abstract

The study was carried out to evaluate the pollution indices of the road surfaces in Nicosia North Cyprus. Dust sample were collected from three types of road (i.e. Residential, Industrial and Major Road) and analyzed using Atomic Absorption Spectrometer at Cancer Research Laboratory Cyprus International University. The assessments are based on single, integrated pollution indices. The general pattern of heavy metals in the road surfaces follows the decreasing concentrations of Cr>Zn>Cu>Ni>Pb>Co>As. The average concentrations of Cu, Ni, and Cr in all the areas exceed the limit of EPA and WHO standards and while that of Pb and As are within the limit values. Strong correlation was observed between {(Cu/ Zn) R= 0.972}, {(As /Cr) R=0.834}, {(As / Ni) R= 0.851}, {(Ni/Cr) R =0.809} at 5% level of significant. In general contamination of heavy metals, in all sites studied, were statistically not different from each other, indicating that the major source of the pollution is from traffic. The street dust should be continually monitored over time. Alternative means of transportation should be provided by the government so that number of vehicle per capita can be reduced drastically.
Keywords: Road Dust; Heavy Metal; Pollution indices;

AIMC-2018-STEM-717

FIELD ACTIVITY MANAGEMENT MODEL LEARNING CYCLE 5-E IN LINOW LAKE

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Abstract

Lake Linow is located in Tomohon City, North Sulawesi Province is an interesting geothermal area with a rich ecosystem of Physics study objects. Lake Linow has been utilized as an object of physics and physics education study of Physics Department Faculty Of Mathematics And Natural Sciences Manado State University, but there is no systematic design and has not been done regularly as part of the lecture. This research gradually designs and implements the management of field activities of learning cycle 5-e model in integrated Linow lake with lectures. Research method using research and development design. The stages of materials and field activities developed adopt the 5E learning cycle (E1: engagement, E4: elaboration, E5: evaluation) as a benchmark for competence development, associated with the field activities stage (K1: introduction and attraction of the object study, K2: exploration of study objects and building skills: practicum, K3: deepening and elaborating knowledge and skills through independent research (or collaboration), and K4: comparative research, applied and competency evaluation for independent activity development The results show that management activities the field of learning cycle 5-e model can support the physics lecturing process that gives systemic direction to the students to carry out field activities and development of independent activities so as to build the comprehensive graduate student competence.
Keywords: Management, field activities, learning cycle 5-E model

AIMC-2018-STEM-722

ANALYSIS OF LATERAL HEAT FLOW OF SURFACE GEOTHERMAL MANIFESTATION BASED ON TEMPERATURE DISTRIBUTION IN PINE FOREST PARK, TOMOHON NORTH SULAWESI

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Co-Authors: Donny R. Wenas
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Abstract

The presence of geothermal energy resource subsurface is reflected on the surface by the appearance of geothermal manifestation, i.e. hot spring, hot mud, fumaroles, etc. Existence of surface geothermal manifestation occurred as consequence thermal propagation from subsurface by fractures as geothermal fluid medium to surface. This research describes the surface temperature distribution to know lateral heat flow direction of surface geothermal manifestation based on temporal and spatial analysis at pine forest park, Tomohon North Sulawesi. This research using the remote sensing methods with thermal infrared channel recorded in years 2013, 2014, and 2015. The result of research shows that thermal anomaly, and lateral heat flow direction of geothermal manifestation at pine forest park trend toward northeast.
Keywords: Heat flow, geothermal manifestation, surface temperature

AIMC-2018-STEM-724

ANALYSIS OF MINERAL COMPOSITION OF ALTERATION ROCK IN WARM GROUND AND STEAMING GROUND IN LAHENDONG NORTH SULAWESI USING SEM-EDX AND FTIR

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Abstract

This research is aimed to study the mineral composition of alterations rock in Lahendong geothermal manifestation area, North Sulawesi. This research is using Scanning Electron Microscopic-Energy Dispersive X-Ray Spectrometric (SEM-EDX) and Fourier Transform Infra Red (FTIR) characterization method. The result of the characterization using SEM-EDX shows that the warm ground contained the mineral silica, while the steaming ground contained the kaolinite clay. The rock elements of the warm ground consist of O and Si, while the rock elements of the steaming ground consist of O, Si, and Al. This result is consistent with the characterization using FTIR.

Keywords: Rock element composition, SEM-EDX, FTIR.

AIMC-2018-STEM-726

GENERAL LINEAR METHODS FOR SOLVING DIFFERENTIAL EQUATIONS

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Abstract

General linear method (GLM) is a large class of numerical methods used to obtain the numerical solutions of differential equations. This large class of methods in numerical analysis encompasses multistage Runge–Kutta methods that use intermediate collocation points, as well as linear multistep methods that save a finite time history of the solution. The derivation of GLM is based on theory of B-series and rooted trees to construct the algebraic order conditions of GLM and it was originally coined by John C. Butcher. Here, the algebraic order conditions of General Linear Method up to order five is given and a new set of coefficients of GLM with order three for finding the numerical solution of ordinary differential equations and Volterra integro-differential equation is derived. The integral operator in Volterra integro-differential equation approximated using combination of composite Simpson’s rules and Lagrange interpolation.

Keywords: General linear method; B-series; rotted trees; algebraic order conditions; differential equations

AIMC-2018-STEM-736

GROUNDWATER VULNERABILITY ASSESSMENT USING MODIFIED SELF-ORGANIZING MAP: A CASE OF BORACAY ISLAND, PHILIPPINES

Corresponding Author: Maureen Nettie Linan
Co-Authors: Bobby D. Gerardo, Ruji P. Medina

Abstract

Groundwater resources is susceptible to contamination and may pose health risk. Intrinsic hydrogeological parameters were considered in the assessment of groundwater vulnerability to contamination using modified self-organizing map algorithm. Clustered data were used to develop the vulnerability map. Results show that the groundwater resources in Boracay Island were found to be vulnerable to contamination as confirmed in the water quality analysis. The developed methodology can be applied to other islands to determine its vulnerability and balance tourism development to ecological integrity of the scarce groundwater resource.

Keywords: Self-organizing map; clustering; groundwater vulnerability

AIMC-2018-STEM-741

PROSPECTS OF PROBLEM AND PROJECT BASED LEARNING BLEND FOR ELECTRONICS ENGINEERING PROGRAMMES IN NIGERIAN UNIVERSITIES

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Abstract

The application of electronics has attained a level where humanity cannot do without electronics, however, the study of electronics is not without challenges considering the complex and abstract nature of the course. The obsolete teaching/learning facilities and methods in Nigerian universities has been a major challenge for the past four decades, thus resulting in a high level of unemployment and lack of industrial and economic development. Various instructional innovations have been introduced in the teaching and learning processes to cushion the complexity and abstractness of electronics engineering programmes with each of the methods having its limitations. This study seeks to explore how a blend of a problem and project-based learning could lead to the acquisition of the desired competencies of electronics engineering based on the needs of the 21st-century industry and the emerging fourth industrial revolution (4IR). To this effect, various problem and project-based learning features like problem identification and analysis, information gathering, critical thinking, teamwork, effective communication, leadership and continues learning were visited based on the previous research findings. It was concluded that the features can produce the desired electronics engineering

skills that could meet the needs of the 21st-century Industry and the 4IR. Keywords: Problem/Project Based Learning; Electronics Engineering; Nigerian Universities

AIMC-2018-STEM-742

GROUNDWATER VULNERABILITY ASSESSMENT USING MODIFIED SELF-ORGANIZING MAP: A CASE OF BORACAY ISLAND, PHILIPPINES

Corresponding Author: Maureen Nettie Linan
Co-Authors: Bobby D. Gerardo, Ruji P. Medina

Abstract

Groundwater resources is susceptible to contamination and may pose health risk. Intrinsic hydrogeological parameters were considered in the assessment of groundwater vulnerability to contamination using modified self-organizing map algorithm. Clustered data were used to develop the vulnerability map. Results show that the groundwater resources in Boracay Island were found to be vulnerable to contamination as confirmed in the water quality analysis. The developed methodology can be applied to other islands to determine its vulnerability and balance tourism development to ecological integrity of the scarce groundwater resource.

Keywords: Self-organizing map; clustering; groundwater vulnerability

AIMC-2018-STEM-744

ARTIFICIAL NEURAL NETWORK FOR GENERALIZED SINGULAR VALUE DECOMPOSITION-BASED LINEAR DISCRIMINANT ANALYSIS

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Abstract

Artificial Neural Networks (ANN) form a powerful framework for machine learning and have achieved a remarkable performance in several areas. It is a collection of interconnected computation units and generalize outputs for new inputs after being trained. This study introduced a new mechanism utilizing ANN which was trained using Bayesian Regularization Back Propagation (BRBP) to improve the computational cost problem of the existing algorithm for Generalized Singular Value Decomposition-based Linear Discriminant Analysis (LDA/GSVD). Through simulation using BLE RSSI Dataset from UCI which has 105 classes and 13 dimensions with 1420 instances, it was found out that ANN improved the computational cost during the classification of the data up to 57.14% while maintaining its accuracy.

Keywords: Artificial Neural Network; Generalized Singular Value Decomposition; Linear Discriminant Analysis

AIMC-2018-STEM-745

SHEAR RATE RESPONSE OF BROMELAIN-GENERATED ANTIOXIDATIVE HYDROLYSATES OPTIMIZED USING CENTRAL COMPOSITE DESIGN

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Abstract

Some protein hydrolysates can potentially exhibit one or more biological effect such as strong antioxidant activity and can be used to improve the functional properties and applicability of proteins in the development of functional foods. This study was aimed to optimize the conditions for the hydrolysis of stone fish protein with bromelain for the generation of antioxidant hydrolysates. The stone fish was hydrolyzed under the optimum predicted conditions of pH (6.5), temperature (54.0 oC), E/S ratio (1.50%) and hydrolysis time (360 min) according to central composite design (CCD) by response surface methodology (RSM). Experimental validation showed that 54.62% degree of hydrolysis gave the values of 48.94% and 25.12% for 2,2-diphenyl-1-picrydrazyl (DPPH) radical scavenging activity and metal ion-chelating activity, respectively. The result of statistical comparison indicated no significant difference compared to the predicted values of 49.79% and 24.075% for DPPH and metal ion chelating activity at 53.079% degree of hydrolysis. The hydrolysates behave pseudoplastically as non-newtonian fluid and showed increase in viscosity at higher concentration and various shear rates. Thus, the antioxidant hydrolysates derived from stone fish protein can serve as functional ingredient that can be incorporated in formulated foods to enhance their nutritional and therapeutic benefits.

Keywords: Keywords: antioxidant; hydrolysates; central composite design; shear rate

AIMC-2018-STEM-750

HALITOSIS SENSOR USING AN OPEN-PATH FIBRE TECHNIQUE

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Abstract

This paper provides an overview of the development of an optical fibre sensor to detect halitosis (bad breath) using the open-path technique. The unique characteristic of each compound which corresponds to their identification allows the

open-path technique to be best suited method in measuring gaseous compounds. In this study, the technique is designed to analyze the absorption spectral lines of Methyl Mercaptan gas and then to evaluate cross sensitivity of the Methyl Mercaptan with other breathing gases such as oxygen, carbon dioxide, and water vapor. The absorption cross section spectrum of the Methyl Mercaptan which generated from the study almost match up the theory with the potential peak selection at 204 nm. The cross sensitivity analysis carried out shows that there are no distinctive interference effects within the wavelength region of 200 nm to 250 nm especially at 204 nm absorption peak. Experimental results validate the use of the open-path fibre technique in a halitosis sensor.Keywords: fibre optics, Methyl Mercaptan, sensor, halitosis

AIMC-2018-STEM-753

SYNTHESIS OF WASTE COOKING OIL-BASED POLYOL VIA ONE-POT EPOXIDATION AND HYDROXYLATION REACTION

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Abstract

This study was carried out to synthesize waste cooking oil (WCO)-based polyol for polyurethane via one-pot epoxidation and hydroxylation reaction. The raw WCO was first pretreated and used to synthesize WCO-based polyol. The effect of concentration of oxidant, hydrogen peroxide (H2O2) was observed using physical, chemical (FTIR, %FFA, acid value, iodine value and hydroxyl value) and thermal (TGA) analysis. The pre-treatment process results in no alteration of functional groups as proven by FTIR spectroscopy. The FTIR spectra of all WCO-based polyol samples showed the formation of OH absorption peak and supported by the increase in hydroxyl value (OHV) from 5.030 up to 229.32 mgKOH/g. It was found that the OHV increased as the concentration of H2O2 increased and the maximum OHV achieved at 35% H2O2. The total weight loss for WCO-based polyol by using TGA is 86.89% and functionality obtained from GC-MS is 2.44. This study showed that the chosen reaction is suitable for synthesis of WCO-based polyol and WCO exhibit promising potential as raw material for polyurethane formation.

Keywords: Waste Cooking Oil; Polyol; Polyurethane; Epoxidation and Hydroxylation

AIMC-2018-STEM-765

EFFECT OF WATER-CEMENT RATIO AND CEMENT PROPORTION ON THE PERFORMANCE OF SEAWEED-MODIFIED MORTARS

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Abstract

The influence of water-cement ratio and cement content on the performance of seaweed-modified (Gracilaria Sp.) mortar was investigated in this study. The experiment was performed using seaweed-modified and unmodified mortars with different water-cement ratios. The modified mortars contained different cement percentages ranged between 21%-30%. The water-cement ratio varied from 0.33-0.6. The flexural strengths of unmodified samples responded insignificantly to the change of water-cement proportion or cement rate. Compressive and flexural strengths of the modified mortars were increased with the higher cement proportions. For higher cement portions and low water-cement proportions, the adhesion strength of the modified samples was enhanced under the wet condition. Shrinkage and water absorption of the modified samples increased with growth of cement proportion and constant water-cement ratio.

Keywords: Seaweed powder (Gracilaria Sp.), Compressive strength; water-cement proportion, Cement portion

AIMC-2018-STEM-769

THE BEHAVIORAL INTENTIONS OF USING PUBLIC TRANSPORTATION IN KUALA LUMPUR

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Abstract

Behavioral intentions are associated with the likelihood of being engaged in a particular behavior. They are crucial, as they indicate that how customers’ may behave in the future has roots in the theory of planned behavior. Behavioral intentions may be responsible for triggering how an individual behaves in the future. This case study examines the behavioral intentions of the public transport passengers in Kuala Lumpur, which is the heart of Malaysia. It also examines the link between the passengers’ behavioral intentions and other underlying factors, which include service quality, perceived values, involvement, and satisfaction. The empirical data was obtained from 412 passengers using questionnaires. Then, the structural equation modeling method was used to analyze the conceptualized relationship model. The results manifest that all of the relationships are statistically significant. Administrative inclusions are also deliberated in this study.

Keywords: Kuala Lumpur; service quality; perceived value; satisfaction; involvement; behavioral intention; public transportation; Structural Equation Modelling.

AIMC-2018-STEM-770

HYBRID CONJUGATE GRADIENT PARAMETER FOR SOLVING SYMMETRIC SYSTEMS OF NONLINEAR EQUATIONS

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Abstract

Mathematical models from recent research are mostly nonlinear equations in nature. Numerical solutions to such systems are widely needed and applied in those areas of mathematics. Although, in recent years, this field received serious attentions and new approach were discovered, but yet the efficiency of the previous versions suffers setback. This article gives a new hybrid conjugate gradient parameter, the method is derivative-free and analyzed with an effective inexact line search in a given conditions. Theoretical proofs show that the proposed method retains the sufficient descent and global convergence properties of the original CG methods. The proposed method is tested on a set of test functions, then compared to the two previous classical CG-parameter that resulted the given method, and its performance is given based on number of iterations and CPU time. The numerical results show that the new proposed method is efficient and effective amongst all the methods tested. The graphical representation of the result justify our findings. The computational result indicates that the new hybrid conjugate gradient parameter is suitable and capable for solving symmetric systems of nonlinear equations.

Keywords: Hybrid; Conjugate Parameter, Nonlinear

AIMC-2018-STEM-778

TEACHER PROFESSIONAL DEVELOPMENT THROUGH STEM EDUCATION: A CASE STUDY IN SCHOOL OF EDUCATION - CAN THO UNIVERSITY - VIET NAM

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Abstract

STEM is a combination of Science, Technology, Engineering and Mathematics to give learners a meaningful, real-life experience. In Vietnam in general and in the Mekong Delta in particular, the STEM education method is quite new, so needs for the attention of the whole society. This article deals with the implementation of the STEM educational application in teacher professional development (TPD) in the Mekong Delta. Scratch programming language is used as a tool for STEM education in this study. As Scratch employs a graphical programming interface rather than traditional code programming, it is simple and straightforward for learners at all ages. Meanwhile, Scratch is highly versatile: if used effectively, it can facilitate teaching abstract concepts in any subject. Coding then was taught as part of the new technologies curriculum for teachers, which is great because it teaches about problem solving, logical thinking, computational thinking, applying as new skills in a fun way. Experimenting with preservice teachers in School of Education in Can Tho University through observation, questionaires and interviews, has yielded positive results. This shows that STEM education is essential and important, especially for teacher staff, meeting the requirements of the Industrial Revolution 4.0.

Keywords: STEM; TPD; Scratch; Computational Thinking; Can Tho University

AIMC-2018-STEM-779

PRELIMINARY RESULTS OF NUMERICAL SIMULATION OF SLUG FLOW IN A REGULAR T-JUNCTION

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Abstract

In this work, a three-dimensional numerical model is employed to investigate two-phase flow split behavior of slug flow in a circular-section regular T-Junction with 0.0752 m diameter. The Volume of Fraction method combined with k-e turbulence model and initial sinusoidal perturbation in ANSYS FLUENT 17.2 is adopted to characterize the effect of slug flow behavior on phase separation efficiency. The preliminary result reveals that simulation work can study slug flow split in great detail and the slug characteristic plays an important role in understanding split behavior at the junction.

Keywords: Two-Phase Separation; T-Junction; Slug Flow; Numerical Simulation

AIMC-2018-STEM-780

MIXTURE CHARACTERISTICS OF BUTON ROCK ASPHALT

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Abstract

The huge deposit of natural asphalt in Lawele of Buton Island has not been utilized optimally. The less optimal usage of Buton rock asphalt (BRA) was due to the technology used, it was based on conventional studies. Furthermore, it was

expected that will be a shortage in petroleum bitumen, due to high price or limited sources of petroleum. In this research, the bitumen used was penetration grade 80 /100 as control. There are numerous bitumen tests were conducted at the laboratory to investigate the characteristic of BRA such as the penetration, softening point, and Viscosity test. There were only one aggregate gradation were considered under this investigation. In this study, an attempt was made to evaluate the viability of mixture characteristic of BRA. Also, to investigate the usage of BRA as binder in asphaltic mixture. The optimum bitumen content by using the Superpave mix design method were 5.5% , 6%, 6.5%, 7% for petroleum bitumen, BRA bitumen, 10% BRA granular and 15% BRA granular, respectively. Then by using Universal Testing Machine (UTM), the samples were tested for performance tests which are Indirect Tensile Test and Dynamic Creep Test. More precisely, the samples were tested at different temperature 30?C, 40?C, 50?C by using the Indirect Tensile Test. Similarly, the samples were tested under only 45?C by using Dynamic creep Test. It was observed that the effectiveness of using Buton rock asphalt as granular gave better overall performance in the asphalt mixture. From the finding ,the usage of 15% BRA granular showed highest stiffness modules and highest permanent deformation resistance when it compare with 10% of BRA granular and BRA bitumen. In addition, the usage of 15% BRA granular gave highest Creep Resistance.

Keywords: Buton Rock Asphalt (BRA) , Bitumen , Superpave Mix Design

AIMC-2018-STEM-785

PERFORMANCE OF A PARTIALLY PACKED UPFLOW ANAEROBIC FIXED FILM SYSTEM IN THE TREATMENT OF SYNTHETIC RUBBER PROCESSING WASTEWATER AT REDUCED HYDRAULIC RETENTION TIMES

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Abstract

The aim of this study to investigate the performance of a partially packed up-flow anaerobic fixed film (UAFF) reactor at hydraulic retention times (HRT) of 17, 14, 10, 8 and 5 days. The reactor was fed with synthetic wastewater that had a chemical oxygen demand (COD) of 6355-6735 mg/L. The anaerobic degradation variables, such as the pH, effluent COD, COD removal efficiency, total Kjeldahl nitrogen (TKN), alkalinity, volatile fatty acids (VFA), and biogas production rate, and its composition were investigated. Results showed that the total COD removal efficiency at 17 d HRT was around 98%, after which point there was a slight decrease at 14 and 10 d HRT (average 97%, and this was reduced further to (average 94%) and (average 88%) at a HRT of 8 and 5 d respectively. The UAFF showed stable operation with effluent volatile fatty acid (VFA) less than 400 mg/L throughout the experimental period (HRT 17 – 5 d). Moreover, the average methane percentage showed a relatively constant profile and was largely unaffected by reduced HRT. These results show that bacteria were readily adapted to wastewater containing high COD at lower HRTs and did not affect the reactor performance substantially.

Keywords: Anaerobic digestion; fixed film; hydraulic retention time; packed column; methane production

AIMC-2018-STEM-788

EFFECT OF POLYDIMETHYLSILOXANE(PDMS) COATING ON THE BEHAVIOUR OF SHAPE MEMORY ALLOY(SMA) ACTUATOR

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Abstract

Shape Memory Alloy (SMA) is a memory metal where it is able to return its initial shape after deformed. SMA will contract when heated and return to its original shpe when cooled down or to its original temperature. Thus, SMA can be used as an actuator and it is simpler compared to motor (servo) and piezoelectric. SMA is considered as clean technology as it requires small amount of power to produce large acuation. SMA wire is heated by joule heating when applying an electrial current through it, resulting in contraction. SMA is also lightweight, making it an ideal actuator for a flapping wing MAV design that has weight and space constraints. However, the SMA's behaviour is nonlinear and the cooling rte is slow. A feedback control system is required to produce accurate actuation of the SMA and a cooling method needs to be included in the design. In this research work, polydimethylsiloxane (PDMS) was used to improve the cooling of the SMA actuator. PDMS is a flexible for wide range of temperature (-40oC to 400oC) which ideally use for SMA that heated up to 70oC. The behavior of SMA with and without PDMS were analyzed to investigate the effects on the feedback response of the SMA actuator. It was found that the PDMS coating increased efficiency of the SMA actuation by improving the time response and reducing the overshoot of the response of the SMA actuator.

Keywords: PDMS; SMA; Flapping wing; Actuator; time response

AIMC-2018-STEM-789

PARAMETER: THE AREA OF MICROCLIMATE GRADIENT DIURNAL DYNAMIC FOR CHARACTERIZATION AND MONITORING OF FOREST ECOSYSTEM AND ENVIRONMENT

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Abstract

AbstractMicroclimate forests are usually described by the parameters: quantity of microclimate differences of interior-exterior, the depth of the effect of edge and gradient. This paper introduces the concepts, methods, and the results of the application of the parameters: the area of microclimate gradiet diurnal dynamic which the advantage in: (1) characterize ecosystem conditions and their interactions with adjacent environments, (2) categorize transects (in forest ecosystems) based on ecosystem conditions and their interactions with adjacent environments, (3) monitoring the forest ecosystem changes (deforestration, natural damage etc), (4) determine the time of thermal equilibrium between forest and environment.
Keywords: microclimate, parameter, gradient, diurnal dynamic

AIMC-2018-STEM-793

IMPROVING LEAF SEGMENTATION BY CREATING THE AUTOMATIC MARKER USED IN MARKER-CONTROLLED WATERSHED SEGMENTATION

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Abstract

Leaves segmentation in a state of nature is absolutely in need of a more complicated process. This is because the leaves that are captured outdoor may be included in a complicated background. The meaning of the complicated background is probably included with soil, residues and branches or overlapped/touched with other leaves that will complicate the segmentation process later. Most research related to leaf segmentation from complex background using watershed segmentation alone is inadequate. This is because, the technique is sometimes still segmenting leaves with imperfect conditions. To get the perfect leaf, post processing technique is needed to obtain the desired leaf. This will rise the time-consuming taken for processing and the technique for post processing should be developed to get the perfect leaf. Therefore, this research introduced the techniques which include the algorithm for automatic marker-controlled watershed transform without applying any post processing technique to obtain desired leaf. According to the previous study, over-segmentation will occurred if the watershed transform technique is directly applied to the gradient image. The problem occurs when there are irrelevant minima, other image irregularities and noise patches. Therefore, marker-controlled watershed transform is one of the approaches that can help decrease over-segmentation. A creation of marker is used to locate coarsely the objects and background. To improve the process of leaf segmentation using marker-controlled watershed transform, an improved algorithm of obtaining foreground marker was developed. The developed algorithm has an ability to create the foreground markers as needed for leaf segmentation. The foreground marker is determined automatically by combining techniques including morphological closing, morphological erosion and morphological reconstruction to the input images. This technique was applied to the gradient HSV images as input images while it is typically applied to binary images or gray scale images. The proposed algorithm will automatically create the foreground marker even though the shape of target leaf was irregular. From the experimental result, 74.1% of leaf images were successfully marked in order to segment individual leaf from complex background.
Keywords: leaf segmentation; complex background; foreground marker; watershed transform

AIMC-2018-STEM-797

PRODUCTION OF BIOFERTILIZER USING GLYCERIN PITCH FROM OLEOCHEMICAL INDUSTRY

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Abstract

Glycerin refining plant in Oleochemical industry has generated a large amount of Glycerol residue which is Glycerin pitch and become a hazard to the environment. Recovery of Glycerol method has become unfeasible due to the cost and has urge the alternative to convert this Glycerol residue to become valuable product. Currently, Glycerol from the waste can become a cheap carbon source for the fermentation because it is readily available. This study is focusing on to use of Glycerin Pitch as medium for Biofertilizer and its effectiveness to the cucumber plant. From the result, Biofertilizer with the ratio 2:1 in volume of Lactobacillus to Glycerin Pitch has high effectiveness to the cucumber plant with promoting the plant height to 40 cm in 18 days compared to commercial fertilizer. This formulation has a pH 5.11, 3.78 MPS viscosity and C/N ratio of 38.85 after 14 days storage. This formulation is quite successful because it almost gives the doubling effect to the plant height as compared to the commercial fertilizer.
Keywords: Glycerin Pitch;Biofertilizer;Fermentation;Lactobacillus;Oleochemical

AIMC-2018-STEM-801

STRUCTURAL STUDY OF ZNO NANOSTRUCTURES ON POROUS SILICON: EFFECT OF PRECURSOR MOLARITY

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Abstract

Wet colloid chemical approach has been employed to synthesis ZnO Nanostructure on Porous Silicon (PSi). Precursor molarities in the range of 0.01 M to 0.20 M were used in order to study its effect on structural property of ZnO

nanostructures. Field emission scanning electron microscopy (FESEM) was used to investigate the surface morphology. The result shows that the formation of flower-like composed of nano-particles 0.01 M. Flower-like ZnO with hexagonal structures were seen at molarity of 0.20 M. The structural was characterized using X-ray diffraction (XRD) microscopy. XRD Spectra shows the peak of (100), (002) and (101) were clearly seen as dominant peaks. In addition, peaks of (102) and (110) are also appeared. The crystallite sizes were in range of 37.9 to 54 nm. Zn-O of 0.19 nm was obtained from the XRD spectra analysis. Based on the texture coefficient analysis, crystalline of ZnO grew with plane (002)-oriented.
Keywords: Structural properties; hydrothermal method; ZnO nanostructures

AIMC-2018-STEM-807

DETERMINATION AND FREE TRADE AREA DEVELOPMENT FREE PORT (KPBPB) ON THE DEVELOPMENT OF THE REGION IN BATAM, RIAU ISLANDS, INDONESIA

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Abstract

Batam Island is built into the Free Trade since 1970 by the Batam Authority, but in 2000 stood Batam City Government, to 2016 the economy grew 6.5%, but since 2017 dropped to 2%, this phenomenon should be a study.The population is employee environment Batam Area Concession Agency, APINDO, BKPM, Batam City Government Employees, the Chamber of Commerce, Community and Students. Total respondents 190 respondents sampled (census method).Data analysis was performed using Structural Equation Model (SEM). The software used for the structural analysis is AMOS 22, descriptive analysis using SPSS version 22.0.Geographical Utilization variable determination to variable Investmenthas standardized estimate of 0.121
Keywords: Free Trade Zone, Free Port, Regional Development.

AIMC-2018-STEM-812

THE INFLUENCE OF LAND USE CHANGE AND SPATIAL DISCRETIZATION OF MIDDLE - LOWER CILIWUNG SUB-WATERSHED ON FLOOD HYDROGRAPH AT MANGGARAI WEIR : A PRELIMINARY STUDY

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Abstract

Jakarta is a lowland area with 40% of its territory at an elevation below the sea level so it is very vulnerable to flooding. One of out many causes floods in Jakarta is by the overflow of the Ciliwung River. The Ciliwung Watershed has a very strategic value in Indonesia because the Ciliwung River is one of thirteen rivers crossing the nation's capital. The rapid urbanization and population growth led to an increasing impervious area in the Ciliwung Watershed which resulted in a flood hydrograph change. This research aims to determine the influence of land use change, which is taking into account the spatial discretization and the riparian characteristic of Middle - Lower Ciliwung Sub-Watershed on flood hydrograph at Manggarai Weir. This research reviews the related literature on the implementation of HEC-GeoHMS version 10.1 developed by US Army Corps of Engineers (2013) to estimate the effect of land use change on flood hydrographs by taking into account the characteristics of the riparian described descriptively and present arguments to claim that the discretization spatial method can provide significantly more flood hydrographs results with existing conditions.
Keywords: Land use change; spatial discretization; HEC-GeoHMS

AIMC-2018-STEM-815

INFORMATION REAL TIME DELIVERY (IRTD) SYSTEM THROUGH INTERNET OF THINGS (IOT): AN IMPROVEMENT IN TRUCK MANAGEMENT ENVIRONMENT

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Abstract

Today, logistic sector particularly in container haulage industry is dealing with million shipment of cargo every day, origin and destination, size, weight, content and location are all tracked across global delivery network. In and out container at the port can cause the port congestion and additionally are going to affect driver to deliver the cargo to the customer at the right time. Due to that matter, container haulage invariably received lots of complain by the customer concerning the delay of the cargo without customer grasp precisely situation that faced by driver in order to deliver the customer’s goods. The delay of this cargo may occur as a result of waiting time at the port terminal, custom clearance, road congestion, bad weather, breakdown of truck and shortage of driver. All this information is late received by the customer and it will affect the level of customer satisfaction. This study proposed to conduct a research about the Information Real Time Delivery Systems IRTD through Internet of Things (IoT) that can give the information of real time monitoring and updated delivery systems to related parties. This research will focus on the current process of delivery notification status to the customer and to redesign model of information real time delivery system at haulage industry. Furthermore, this research will determine the utilization benefit of IRTD system at haulage industry. Business

Process Redesign model will be adopted in this study as a holistic guidance about a development model of IRTD integrated IoT technology as an improvement in haulage industry environment.
Keywords: IoT; Real Time; Haulage industry; Business Process Redesign

AIMC-2018-STEM-817
LEARNERS' PERSPECTIVE ON CRITICAL FACTORS TO CLOUD VIRTUAL LEARNING ENVIRONMENT (CLOUD-VLE) SUCCESS: AN EMPIRICAL ANALYSIS
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Abstract
The use of Virtual Learning Environment (VLE) in academic institutions is becoming an imperative for many institutions. The growth of the advanced education system now is depending on the increased of Virtual Learning Environment (VLE) technology utilization. Education institution communities are encouraged to adopt a variety of VLE technology to support the process of teaching and learning. The objective of this research is to measure perspective of VLE acceptance among lecturers in the context of Moodle application by using data of 541 lecturers at selected Higher Education Institutions. A framework of research constructed based on a comprehensive study on the theory of service quality and the Technology Acceptance Model (TAM). Eight factors hypothesized which consist of five independent variables; organization support, knowledge support, technical assistance, system characteristics and lecturer style and innovation, two belief variables; perceived usefulness and perceived ease of use and one dependent variable; behavioral intention to use the VLE. All the factors were tested to determine whether they are important in influencing future use of the VLE and statistical analysis methods determined the key driver factors. The results showed that university lecturers have an above average level of VLE acceptance with very high level of significant value and all success measures are critical to lecturer’s continuous intention to use LMS in blended learning.
Keywords: Technology Acceptance Model; Moodle; Behavior; Success Factor; VLE

AIMC-2018-STEM-819
A NEW APPROACH FOR STEM EDUCATION: A CASE STUDY IN CAN THO UNIVERSITY - VIET NAM
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Abstract
This paper proposes the use of the Scratch language in mathematics teaching for high school students in Viet Nam. With the goal of approaching programming in a simple and natural way to math teaching and making learning fun, this paper focuses on answering to the questions: "Why should Scratch be used in math education? and "What are the benefits of using Scratch in math teaching and learning?" By experimenting with students at Can Tho University for some arithmetic sequence problems, the results show the feasibility and the necessity of applying ICT in teaching mathematics through the use of Scratch and some free online tools such as OKMindmap, Facebook, and G Suite. This study finally demonstrates the new methodology to implement STEM education by integrating math instruction with programming with Scratch through WebQuest 2.0.
Keywords: STEM; Mathematics Education; Scratch; WebQuest; Can Tho University

AIMC-2018-STEM-820
IDENTIFYING IBN KHALDUN THOUGHTS THROUGH TWITTER HASHTAGS: A SENTIMENT ANALYSIS
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Abstract
Social networking sites (SNS) has shown an enormous phenomenon in understanding public opinion and searching of data on a wide variety of topics. The purpose of this paper is to find the correlation between keywords from Ibn Khaldun thoughts and hashtag from Twitter. This research applied qualitative method by identifying the keyword from Ibn Khaldun thoughts in The Muqaddimah book on his discourse related to human and civilization. Next, from these keywords, the synonyms have been verified by Institute of Language and Literature (DBP) thesaurus and Google Trends has been used to find the integration among Google search query and data in Twitter. Then, the validate hashtag keyword been identified and generate to be searched on Twitter. The public’s tweets have been collected related to the hashtag and identify the positive or negative statement through the tweets. From the tweets collection, users statement can be linked to the Ibn Khaldun thoughts in understanding the concept of human behavior and sociology. In conclusion, through these tweets searching it can be extended to find the ethical issues on Twitter
Keywords: Ibn Khaldun; Twitter; Institute of Language and Literature (DBP); Google Trends

AIMC-2018-STEM-822

REGIONAL CHARACTERISTIC BASED SHALLOTS AGRO-INDUSTRIAL CLUSTER DEVELOPMENT WITH SOFT SYSTEM METHODOLOGY APPROACH

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Abstract

*Regional Characteristic based Shallots Agro-industrial Cluster Development with Soft System Methodology ApproachErmia Sofiyessi*a, Marimin a, Eriyatno a, Sutrisno ba Department of Agro-industrial Technology, Faculty of Agricultural Technology, Bogor Agricultural University, PO Box 220 Bogor 16002, Indonesiab Department of Mechanical Engineering and Bio-system, Faculty of Agricultural Technology, Bogor Agricultural University, PO Box 220 Bogor 16002, Indonesia*Corresponding author Email: *ermiasofiyessi@gmail.comAbstractUn-structure problems of shallots due to asymmetric information along the supply chain. In recent years, shallot is one of horticultural commodities with high price fluctuation and contribute the inflation for Indonesian economic development. This study conducted in Brebes District of West Java which is the biggest production center for shallot in Indonesia and was used a cluster development that was initiated by Bank of Indonesia (BI). The main objective of this study was to describe the unstructured or ill-structure problematic situation in the development of agro-industrial cluster of shallot which often involve behavioral variable and, thus cannot be addressed by the hard methodologies. To solve the problems above and as a reference to knowledge through the inductive process with the application of a methodological approach called Soft System Methodology (SSM). This research also studied on how the application of SSM to organization requires consensus among the stakeholders in the scope of agro-industrial cluster of shallot. The result of the application of this method was that problem in condition of shallot’s farmers through the functional improvement of farmers institutional and performance of the shallot supply chain in the field research have been identified. The problem condition was explained in a Rich Picture supported by CATWOE (customers, actors, transformation process, world view, owner, environmental constraints) analysis. The results, a conceptual model be compared with the real world conditions. This study suggested solution in improving the functional farmer institution and performance of stakeholder in agro-industrial cluster of shallot.*

Keywords: Shallot; Agro-industrial Cluster; Soft System Methodology; Farmers institution; Rich picture

AIMC-2018-STEM-826

PRODUCTION OF BIOFERTILIZER USING GLYCERIN PITCH FROM OLEOCHEMICAL INDUSTRY

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Abstract

Glycerin refining plant in Oleochemical industry has generated a large amount of Glycerol residue which is Glycerin pitch and become a hazard to the environment. Recovery of Glycerol method has become unfeasible due to the cost and has urge the alternative to convert this Glycerol residue to become valuable product. Currently, Glycerol from the waste can become a cheap carbon source for the fermentation because it is readily available. This study is focusing on to use of Glycerin Pitch as medium for Biofertilizer and its effectiveness to the cucumber plant. From the result, Biofertilizer with the ratio 2:1 in volume of Lactobacillus to Glycerin Pitch has high effectiveness to the cucumber plant with promoting the plant height to 40 cm in 18 days compared to control without fertilizer. This formulation has a pH 5.11, 3.78 MPS viscosity and C/N ratio of 38.85 after 14 days storage. This formulation is quite successful because it almost gives the doubling effect to the plant height as compared to the control without fertilizer.

Keywords: Glycerin Pitch;Biofertilizer;Fermentation;Lactobacillus;Oleochemical

AIMC-2018-STEM-827

THE DYNAMICS OF DEREGULATION OF THE ELECTRICITY MARKET FOR WEST MALAYSIA

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Abstract

This research proposes a framework to deregulate West Malaysia’s current single buyer model (SBM) electricity market into a wholesale competition model. Competition among power producers is minimal in the current market structure and only happens during the proposal stage to build new power plants. Therefore electricity generation is over-dependent on current national gas reserves and the importation of cheap coal from Indonesia to keep tariffs low due to minimal competition among power producers. However, this is not a suitable long term and environmental friendly solution to keep tariffs low as it increases carbon dioxide and other greenhouse gases (GHG) emission continually. Hence, this research will simulate different electricity market scenarios for 40 years using system dynamics method to study the effects of SBM transitioning into a wholesale competition market. This is achieved by introducing an hourly competitive bidding among power plants to sell their generated electricity to the national electricity company, Tenaga Nasional Berhad (TNB). Results have shown that tariffs for end consumers are lower in the wholesale competitive market than the current SBM market even after incorporating expensive large scale renewable energy growth.

Keywords: Energy; Electricity Market; Deregulation; System Dynamics; Sustainability

AIMC-2018-STEM-828

MODELING AND CONTROL DESIGN OF AN AUTONOMOUS HYBRID WIND/ENERGY STORAGE GENERATION UNIT

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Abstract

The application of power generation systems, remote area is now famous in faraway areas hybrids inclusive the islands which leads to the importance of designing and development of new generation system. The aim of this contribution is to investigate applying the PID control for voltage regulation of an isolated wind generation system. This utilizes an accompanying energy storage framework, with the role to stabilize the load voltage in autonomous utilizations. The essential achievement of this research is the design of a control strategy which accomplishes voltage and battery state of charge monitoring, with optimum conditions for battery charging. The mathematical model of the studied sub-systems is taken into account when the controller which needed to preserve the DC-link voltage constant at its desired value. Digital simulation results illiterate that the power desired by the loads may be influentially supplied and transported by the given hybrid wind / energy storage power generation system based on proportional-integral-derivative (PID) controller. Also, the emulation outcomes present there a useful prediction of the electrical variable waveforms and interesting implementation in case of the presented controller emulated with the case of without controller as maintaining the load voltage constant at its reference values.

Keywords: Hybrid wind/storage generation unit; PID control; Stand-alone power system

AIMC-2018-STEM-829

CHEMICAL REGENERATION OF MODIFIED MAGNETIC-PEI-CELLULOSE ADSORBENT FOR REMOVAL OF ANIONIC REACTIVE BLACK 5 DYES

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Abstract

Adsorption process has been heavily used to remove pollutants from waters and wastewaters. However, the economical competitiveness of the adsorption process depends upon the reusability of exhausted adsorbent. This study investigated the chemical regeneration of magnetic-PEI-cellulose adsorbent presaturated with dyestuffs by using two different regenerants which are hydrochloric acids (HCl) and sodium hydroxide bases (NaOH) using batch experiments. The magnetic-PEI-cellulose adsorbent was synthesized by using crosslinking method. Adsorption experiment was conducted to remove 0.1g/L of anionic reactive black 5 (RB5) dyes and desorption experiment was conducted by regenerate dye loaded adsorbent using HCl and NaOH regenerants at 0.1, 1.0 and 5.0 mol L-1. From the batch desorption test results, 5 mol L-1 of HCl was found to be the optimal regenerant for the RB5 dyes. A higher concentration of acidic regenerant could improve the dye adsorption efficiencies up to 4 times of cycles with adsorption efficiency (74.9%). Meanwhile, basic regenerant has low capability to desorb RB5 dyes and the lower concentration of NaOH (0.1 mol L-1) showed better adsorption performance after 4 times of cycles with adsorption efficiency (1.9%). Therefore, acidic regenerant indicates better results to be used as to desorb RB5 dyes from magnetic-PEI-cellulose adsorbent.

Keywords: Adsorption; Adsorption efficiency; Desorption; Dye wastewater; Regenerants

AIMC-2018-STEM-835

TRUCK ARRIVAL MANAGEMENT SYSTEM: REDESIGN OF BUSINESS PROCESS

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Abstract

As world container volume continues to grow and with the introduction of post-panamax containership into major trade routes, the port industry is under pressure to deal with it. Truck queuing in seaport terminal has been long recognized as a source of logistics problems because of trucks congestion especially during peak hour. Gate congestion at marine terminal is considered a major issue facing by the haulier for container pickup and delivery in the terminal area. In order to find better planning decision, it is necessary for the information system to be utilised. Truck Arrival Management (TAM) has been recognized as an effective solution to alleviate the gate congestion at container terminals in controlling the flows maximum number of trucks that can approach the terminal and pass the gate during the time windows in which the working day is split. This paper aims to analyse the current practise in Johor Port and redesign the business model of truck arrival management in the study area. Furthermore, this research also will be conducted to determine the benefits of a Truck Appointment System for port operation. Besides that, this research applies qualitative method which is interview to analyse the current practise in the study area. In addition, an optimization model is developed to minimize gate congestion issue by using Business Process Redesign (BPR) model.

Keywords: TAM; TAS; BPR; Optimization

AIMC-2018-STEM-838

THE IN VITRO INDUCTION OF FICUS CARICA L.

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Abstract

Fig tree (Ficus carica L.) is one of the plants that bear fruits and have high value in medicinal properties. It is commonly grown in Mediterranean which known for its bio-product that provides high nutritional value. The demand for this plant had grown extensively by the industry including pharmaceuticals and health. In order to meet such demand, in vitro propagation techniques have provided a well-recognized potential for rapid multiplication of F. carica for the supply of good-quality cultivation material for industry. The initiation of F. carica culture had taken up response towards various concentrations of plant growth hormone. The plant hormones include Benzylaminopurine (BAP), Kinetin, Napthelene acidic acid (NAA) and Indole acetic acid (IAA) with concentrations of 5, 15, 30 and 45µM for every plant hormone. Using the stem of F.carica as explant, attempts had been made to establish tissue culture protocol that involved multiple shooting and improve rooting. The responds from each culture were observed and recorded from week to week. Upon observations, it shown that culture starts emerging shoots on second week and leaves on the third week. The highest mean number of shoots were observed for explant cultured in media supplemented with 5µM of BAP which is 6.667 ± 2.082. Explant that culture in media supplemented with auxin had also emerged roots on third week. This findings show that this method have high potential for future research in producing mass propagation of F. carica and other related study.

Keywords: Ficus carica; in vitro; initiation; plant hormone

AIMC-2018-STEM-843

MECHANICAL AND ELECTRICAL PROPERTIES OF SILICONE RUBBER BASED COMPOSITE FOR HIGH VOLTAGE INSULATOR APPLICATION

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Abstract

The silicone rubber (SiR) based composites has grown the increasing demand in high voltage insulation application due to their exceptional ability in tackling drawbacks of existing ceramic types insulator. This paper showcases the experimental findings in an effort to understand the mechanical and electrical behavior of silicone rubber filled with various types of mineral fillers (SiO2, CaCO3, and CaSiO3) specifically for high voltage insulator application. The properties variation in both mechanical and electrical attributes were analysed through tensile testing and surface resistivity testing. Addition of fillers to silicone rubber for different weight percentages (5,10,20,30,40) wt. % has dictated that, as filler loading increased, the mechanical tensile performance also significantly decreased. This is due to weak reinforcing action and gap formation created between fillers and rubber macromolecules that cause the cohesion between rubber-filler components are getting weaker. While the value of surface resistivity is found to increase as the filler loading increased. Integration of silicone rubber with mineral fillers has resulted in no improvement of mechanical properties, but having a good surface resistivity. This phenomenon was further explained through the fracture morphology evaluation via Scanning Electron Microscope (SEM) observation. From these preliminary studies, it can be concluded that, for SiR based composite system, the resulted mechanical properties and electrical properties cannot be inter-related between each other and both attributes are stand alone with regards to the effect of filler loading and mineral filler types.

Keywords: Silicone Rubber; Insulator; High Voltage

AIMC-2018-STEM-847

ANALYSIS OF INDONESIAN PORT SERVICE PERFORMANCE BASED ON MONTECARLO SIMULATION AND IMPROVING SUGGESTION

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Abstract

Marine sector is one of the important sectors in Indonesian trade. Indonesia as the main traffic route of world trade which is the main entrance of import and export goods from various countries. Service loading and unloading time become an important factor for affecting service the port of Indonesia. The performance of ship service when coming and going from mooring still does not meet the standards set by the government. The loading and unloading services are still below the target with an average of 50% of the 70% target. To improve service standards, simulations are required to look at the current situation based on three-time variables: effective time, idle time and non-operating time. the simulation results serve as the basis for improving the standard of achievement targets. Simulation of Montecarlo is used as an approach. Simulation results show that the loading and unloading service condition is still below standard. Improvements in infrastructure and human resource optimization are discussed in this study. Such improvements are expected to reduce the time of non-operation and may increase the percentage of service standards.

Keywords: Service Performance; Port; Montecarlo; Improvement

AIMC-2018-STEM-854

IDENTIFICATION OF AQUIFER LAYER AND CONDUCTIVE ZONE IN TOMPASO MINAHASA USING SCHLUMBERGER CONFIGURATION RESISTIVITY METHOD

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Abstract

The existence of groundwater associated with geothermal in an area is inseparable from the condition of the subsurface geological layer of the area. To determine the presence of groundwater associated with geothermal heat, it is necessary to identify the subsurface areas that have small resistance values. This study aims to identify the location of the aquifer layer and conductive zone (low resistivity) in the area of geothermal output (discharge area) by first knowing the condition of the subsurface. This research, using geolistrik method with schlumberger rule. The results showed that the subsurface of the research area is composed by Sand, Sand Stone-Gravel, Sand-Gravel, and Clay. The conclusion of this research is the condition of the aquifer is an aquifer productive is being with debit 500L / sec and is located at a depth of 2.26 to 7.06 m, 24.2 - 33.6 m, 54.6 m at measuring point K-01 and at a depth of 1.32 - 6.78 m, 22 - 39.7 m at the K-02 measuring point. Then the conductive zone is at a depth of 0.71 - 15 m with a resistance value of

Keywords: Aquifer, Conductive zone, Resistivity, Schlumberger.

AIMC-2018-STEM-856

MOBILE CLOUD COMPUTING: LAYERED ARCHITECTURE, ELEMENT, TAXONOMY AND CHALLENGES

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Abstract

Mobile Cloud Computing (MCC) holds a new dawn of computing, where multiple services are attracted to the cloud users through the internet. MCC has a qualitative, flexible and cost-effective delivery platform for providing services to mobile cloud users with the aid of internet. Due to the advent of MCC, capabilities of mobile devices have been improved. Now, mobile devices are dependent on cloud-based computing and information storage resources, to carry out complex computational operations which include multimedia, searching and data mining. While addressing the limitations of mobile devices through MCC, various issues related to the efficient operation of MCC including security, quality of services and application development for mobile devices and offloading have been originated. Recently, the issues of MCC have witnessed significant attention from industries and academia due to the huge potential to reduce computing cost and to ease the availability of computing power in mobile devices. Various proposals have been made to address the issues of MCC. In this context, this paper qualitatively reviews MCC focusing on layered architecture, element, taxonomy, and future issues. Specifically, a five layered architecture for MCC is proposed including task application, perception, network infrastructure, Internet and communication and computation layer. Three major elements of MCC layered architecture; namely, mobile device, network, and cloud computing are identified. A taxonomy for MCC is presented considering major themes of research including energy-aware, security, applications and QoS-aware developments.Each of these themes is critically investigated with comparative assessments considering recent advancements. Analysis of metrics and implementation environments used for evaluating the performance of existing techniques are presented. Finally, some open research issues and future challenges are identified based on the critical and qualitative assessment of literature for researchers in this field.

Keywords: Mobile cloud computing; Layered architecture; MCC elements; MCC taxonomy

AIMC-2018-STEM-861

IMPROVED CONTROL METHOD FOR REDUCING THE VOLTAGE AND CURRENT HARMONICS UNDER NON-LINEAR LOAD CONDITIONS IN A MICROGRID

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Abstract

For the past few decades, the renewable energy sources have become the main alternatives to centralized power generation system mainly due to economic and environmental factors. The two major problems in imbedding the distributed Renewable Energy Sources (RES) in distribution system are the severe current harmonic contents present in their output current and the unbalancing in system voltage and current. Accordingly, this research work aims to develop a robust controller to minimize the current and voltage harmonic contents in a three-phase hybrid photovoltaic(PV) and wind turbine (WT) Grid Connected Inverters (GCI) subjected to nonlinear and unbalanced load conditions. The proposed method effectively offsets the harmonic contents in voltage and current of the system under study without relying on offset devices such as passive and active filters. The results provide the effectiveness of the proposed control strategy in reducing the Total Harmonic Distortion (THD) while simultaneously correcting any unbalance in the system. The newly developed method, which features the synchronous reference frame (SRF), proved itself to be very effective, as evident from the simulation results obtained.

Keywords: Photovoltaic (PV), Distributed Generation (DG), Wind Turbine(WT), non-linear loads. Harmonics.

AIMC-2018-STEM-864

EXAMINING TIME AND COST PERFORMANCE OF BUILDING AND INFRASTRUCTURE PROJECTS OF MALAYSIA

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Abstract

Poor time and cost performance of construction projects results in significant monetary loss to the investors. It is common problem worldwide including Malaysia which must be handled properly. Thus, this paper investigated time and cost performance of construction projects in Malaysia. This study was conducted through case study of six projects involving 3 infrastructure projects and 3 building projects. Data involved the investigation on site as well as documents of the projects and structured interviews of the officials involved in handling those particular projects. This study revealed that 5 of the 6 projects were had poor time performance and were over ran where all three infrastructure projects were delayed, while two building projects delayed. From cost performance, it was observed that only one building project were completed within estimated cost, one infrastructure project was under run while remaining four projects had poor cost performance. The findings of this research paper will be helpful for the practitioners to understand the time and cost behaviour of the projects

Keywords: Time performance; cost performance; case study; Malaysia; infrastructure projects and building projects

AIMC-2018-STEM-874

INFLUENCE OF WATER VOLUME AND HEATING TEMPERATURES ON TYPE OF PHASES AND CRYSTALLITE SIZE OF SOL-GEL THIN FILMS DEPOSITED WITHOUT SOLVENT

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Abstract

Sol-gel parameters such as solvent, heating temperature and water volume play a role on affecting phase and crystallite size of Titanium Dioxide (TiO2) thin film. In this paper, the influence of water volume and heating temperature on phases and crystallite size were investigated. TiO2 thin films deposited without solvent by varying water volume which is 32 ml (W32) and 64 ml (W64) and heated at various heating temperature. The phases of TiO2 were analyzed by X-ray diffraction (XRD) and Raman Spectroscopy while crystallite size was calculated using Scherrer equation. Results show that when heating temperature at 500ºC, W32 formulation exhibit anatase and rutile phase while W64 anatase and brookite phase were presence. Increment in heating temperature at 600ºC, brookite phase in W64 formulation was transformed into rutile phase with crystallite size of 28.93 nm. Hence, the interest on preparing TiO2 coating without solvent is an alternative method towards green deposition process.

Keywords: Dip-Coating, Solvent, Water Volume, Heating Temperature

AIMC-2018-STEM-886

AN EFFECTIVE SEARCH-BASED APPROACH FOR TESTING OF NON-FUNCTIONAL PROPERTIES IN SOFTWARE SYSTEM: AN EMPIRICAL REVIEW

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Abstract

Search-based software testing (SBST) is considered as an effective process in the generation of non-functional test cases. The SBST employs metaheuristic search techniques to evaluate the best-case and worst-case execution times of real-time scenarios. However, this paper conducts an exploratory review on effective search-based approach for testing the non-functional properties in software systems. The review also investigates each technique based on different applications employed in a white box, black-box, and gray-box testing. Further surveys metaheuristic search techniques such as Genetic Algorithms, Harmony Search and Simulated Annealing to determine the fitness functions employed, non-functional testing and the challenges observed in these approaches. From the exhaustive review conducted in this paper, it shows that Harmony Search-Based Algorithm is the effective technique to address the problem of software re-modularization.

Keywords: Genetic Algorithms; Non-functional testing; Harmony Search and Simulated Annealing.

AIMC-2018-STEM-888

PRELEMINARY COST ESTIMATE MODEL FOR MAINTENACE AND IMPROVEMENT OF ROAD PROJECT

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Abstract

This study is a case study on preliminary cost estimation model for road maintenance and upgrading project at Public Works Department of Bina Marga East Java - Indonesia. The purpose of this study is to plan the initial project cost estimate. Data were collected from project cost budgets from 2010 to 2017 obtained from project contractors. The 2010-2017 project budget data is converted to 2017 per m2 on the basis of the inflation value prevailing in the year of project implementation. Data analysis using Cost Significant Model (CSM) and multiple linear regression with the help

of SPSS software. The results of the study concluded that 87.23% of jobs affecting the cost of maintenance and upgrading projects consist of; (1) asphalt work, (2) bulking pavement work (3) stone pairs work, and (4) drainage work. The equation model of project cost estimation of maintenance and improvement of highway based on Cost Significant Model is in the form of regression equation, Y = 0,198 + 0,522 X1 + 0,323 X2 + 0,161X3 + 0,085X4. The results of this study have an estimated accuracy of -1.22 % to + 8.22 %, with an average of +2.05% accuracy. When compared to the estimation using the road length parameters per m2 used by the Public Works Department of East Java-Indonesia Province, the accuracy ranges from -18.68 % to +18.05 %, with an average of 1.35% accuracy.
Keywords: preleminary; estimation; cost; road; CSM

AIMC-2018-STEM-889

COMPARISON BETWEEN CONVENTIONAL METHOD AND MODERN TECHNOLOGY IN AL-QUR'AN MEMORIZATION

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Abstract

Traditionally, a book called mushaf is used to memorize the al-Qur’an. Among conventional methods, there are two popular methods used for this purpose. There are Takrar and Tasmi’ methods. The Takrar method which is a way of repeating the new memorization and previous memorization. On the other hand, the Tasmi’ method is used to correct the memorization, strengthen the memorization and conduct the evaluation of the memorization. Nowadays, the improvement of smart phones technology and the availability of networking technology, many applications on al-Qur’an are being designed for mobile devices to make this learning process continually easier and faster than before. The growth of technology is also contribute in memorizing al-Qur’an in term of teaching and learning. The technology that assist the huffaz in memorizing al-Qur’an such as E-Hafiz, Quran App and RFID technology are proven to be an alternative method. This paper compared the performance between the conventional and modern methods. Based on the comparison, it is shown that the modern technology gives better performance as compared to the conventional methods.
Keywords: Al-Qur'an memorization, mobile application technology

AIMC-2018-STEM-891

THE ROLE OF TRUST, SECURITY AND PRIVACY IN DEVELOPING SECURE WIRELESS SENSOR NETWORKS

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Abstract

Wireless sensor nodes have been deployed in the fields for sensing and monitoring the surrounding environment but this ease of open deployment with little or no human interaction makes wireless sensor networks vulnerable to variety of security threats and internal malicious attacks. Although, various security mechanisms are in place to safeguard against external attacks but detection of malicious node which causes an internal attack remains a challenge. Trust management schemes play an important role in the development of secure systems and are probable to be a strong tool for the unexpected node detection behaviour. In order to detect untrustworthy node a trust evaluation model is proposed which evaluates the direct and indirect values of trust between different nodes interacting and communicating with each other. The proposed model evaluated through simulation and results show the increased rate in detection of abnormal behavior of the node.
Keywords: Security; Trust; Privacy; WSN

AIMC-2018-STEM-892

ANALYSIS OF DEFLECTION AND MOMENT CAPACITY ON THE PRECAST BEAM OF THE NK-SPIRCON CONNECTING SYSTEM

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Abstract

This study is a case study on the planning of a multilevel building of the Faculty of Medicine, University of WijayaKusuma Surabaya, which aims to compare the strength of precast beam structure using NK-SpirCON connection system with conventional beam (cast in situ). The model of building structure and beam used is the result of consultant planning modified into precast beam with dimension and number of reinforcement according to planning result where connection between beam and column is used NK-SpirCON connection system. The test is done in collaboration with the number of specimens according to the number of variations of the existing beam type. The test is performed by gradually loading the load on the specimen to calculate the maximum load, maximum deflection and acceptable capacity moments of the beam. The results conclude that the precast beam using NK-SpirCON connection system has the ability to receive larger deflection and moment capacity than the conventional beam (cast in situ) with 29,81 % and 34,64 % difference. For further research it is advisable to research the shear strength of the beam and the strength of the connection between the beams and the columns due to various loads including quasi dynamic loads according to the prevailing regulations and regulations in Indonesia.
Keywords: precast beam; NK-SpirCON connection; deflection; moment capacity

AIMC-2018-STEM-894

ORGANIZATION SUPPORT IN CLOUD COMPUTING IMPLEMENTATION SUCCESS IN EDUCATION SYSTEM: SCALE DEVELOPMENT AND VALIDITY IN DELPHI

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Abstract

Cloud computing (CC) support for learning systems has been viewed as one of the most discussed issues that promise to modernize computing by providing visualized resources as a service over the internet. To be stable in cloud computing acquisition requires an education institution to address many of the same concerns they face in implementing an Information System (IS) service. Currently, there is still lack of CC implementation standard and organisational support that impacted VLE system performance. Previous research has reported that the influence of the CC implementation decision depends on the impact of various factors studied. Nonetheless, organisational support is the least factor mentioned especially studies from Malaysia. Thus, the main purpose of this study is to develop a validated scale of organisational support in implementation decision activities towards CC implementation success. In this paper, the Delphi process adopted to measure consensus among nominal group technique (also known as the expert panel). Key methodological issues in using the methods are discussed, along with the distinct contribution of consensus methods as aids to decision making in education service development. The study has adapted stages of proses flow of scale development and validation of measurement items according to legitimate measures in Delphi technique. The measurement scales formed are based on literature review and field studies conducted to increase the reliability and validity values. Organisational support constructs were divided into top management support, firm size, awareness and cost. A total of 5 items have been successfully set up for further validation.

Keywords: Cloud Computing, Visualised, Organization Support; VLE

AIMC-2018-STEM-898

THE EFFECT OF WASTE PAPER FILLER ON THE MECHANICAL PROPERTIES AND RHEOLOGY CHARACTERISTIC OF FILLED NATURAL RUBBER

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Abstract

This investigation on the mechanical properties and rheology characteristic of waste paper filled natural rubber composite. The rubber composite based on SMR CV 10 and waste paper filler were mixed and compounded using two-roll mill at different filler loading (10-40 phr). Rheological and mechanical properties such as tensile and tear test were investigated. To study the curing characteristic, rheometer was used to measure the cure time. The tear resistance increases gradually with increasing filler loading. The tensile strength increases gradually while the young modulus increase until it reaches an optimum waste paper loading and decrease gradually after that. It is supported by strain at 200 percent stress that increases gradually with increasing filler loading. The waste paper filler has shown the capability to enhance the mechanical properties and curing characteristic of natural rubber composite.

Keywords: waste paper filler, rubber composite, natural rubber, natural filler

AIMC-2018-STEM-900

PROGRESSIVE FREEZE CONCENTRATION OF WATERMELON JUICE

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Abstract

The purpose of this research is to concentrate watermelon juice by extracting water from a solution via freezing water out of the solution, leaving behind some concentrate rich in its solutes and without losing valuable aromatics. In food processing industry, freeze concentration is one of the technologies used to concentrate fruit juice. Freeze concentration is a more preferable method compared to other concentration methods, as this method separates water from the juice without heating and effecting its sensory characteristics, besides providing a good quality product due to the low temperature used in the process. There are two basic methods of freeze concentration, which are progressive freeze concentration and conventional method of suspension crystallization. In this study, progressive freeze concentration method was used, where only a single ice crystal is formed in the system to remove water from solution. The crystalliser design used for progressive freeze concentration was rotating cylindrical crystalliser with anti-supercooling holes. The effects of coolant temperature and rotation speed were evaluated and observed based on the value of effective partition constant and concentration efficiency. From the study that has been conducted, it was found that coolant temperature of -10 degree C resulted in the lowest K value and highest concentration efficiency with 0.38 and 53.3% respectively, while rotator speed of 300rpm had shown the best performance for the system based on the lowest K value of 0.28 and a high concentration efficiency of up to 50.3%.

Keywords: progressive freeze concentration, watermelon juice, partition constant, concentration

AIMC-2018-STEM-901

OPTIMAL HOMOTOPY ASYMPTOTIC METHOD FOR SOLVING LANE-EMDEN AND EMDEN-FOWLER DIFFERENTIAL EQUATIONS

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Abstract

In this paper, the Optimal Homotopy Asymtotic Method (OHAM) is used to study the singular Emden--Fowler and Lane--Emden equations initial and boundary value problems. The OHAM overcomes singularity at the origin x=0. We confirmed that the Optimal Homotopy Asymtotic Method (OHAM) gives efficient method for analytic approximate solutions of equation. We solved some numerical examples for checking our result compare with Differential Transform Method (DTM), Variational Iteration Method (VIM) and Adomian Decomposition Method (ADM).

AIMC-2018-STEM-903

THE SYNERGISTIC EFFECT OF SILVER NANOPARTICLES-MULTIWALLED CARBON NANOTUBES (AGNP-MWCNT) ON BIOAEROSOL BACTERIA CONTAMINATION OF AIR-CONDITIONER FILTER

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Abstract

Hybrid nanostructure have been widely studied due to its high potential in biotechnology. This study reports the development of nanohybrid composed of silver nanoparticles (AgNP) and oxidized multi-walled carbon nanotubes (ox-MWCNT) for its antibacterial effect on bioaerosol bacteria from air-conditioner filter. It was first prepared by treating pristine MWCNT with concentrated sulphuric and nitric acid mixture to generate ox-MWCNT. Afterwards, the AgNP, produced from silver ion reduction method was attached on ox-MWCNT by sonication in ethanol. The successful attachment was verified using Fourier transform infrared spectroscopy (FTIR), energy dispersive X-ray spectroscopy (EDX), transmission electron microscopy (TEM), zeta potential and dispersion test. To confirm antibacterial effect of AgNP-MWCNT, the inhibition zone was measured against isolated bacteria culture at concentration of 30, 50 and 100 μg/ml, and was compared to that ox-MWCNT. From the results, AgNP showed successful attachment to ox-MWCNT, confirmed by the changes of C=O intensity peak at 1720 cm-1in AgNP-MWCNT, as compared to ox-MWCNT. AgNP-MWCNT also showed noticable peaks at 1401, 1065 and 6707 cm-1 which indicates the interaction of silver with the functional group. Silver element in AgNP-MWCNT was at high percentage (69.5%) in EDX results, proved by TEM analysis that showed AgNP embedded on the surface of ox-MWCNT. AgNP-MWCNT also showed good stability in water as ox-MWCNT, confirmed by zeta potential results with value of -31.23 mV and -29.99 mV, respectively. In the antibacterial test, 100 μg/ml AgNP-MWCNT yielded the most efficient inhibitory zone at approximately 3 mm on pure culture containing gram positive bacteria, while ox-MWCNT showed clear zone of less than 1 mm. The results is promising to show synergistic activity of AgNP-MWCNT compared to ox-MWCNT alone, which would be beneficial for researchers interested to study requirement of AgNP-MWCNT needed to hinder growth of bacteria. Further studies however is required to determine bacterial strain inhibited by 100 μg/ml AgNP-MWCNT as lower concentration (30 and 50 μg/ml) is not effective for antibacterial treatment modality.

Keywords: antibacterial, MWCNT, silver nanoparticles, hybrid nanostructure, bioaerosol

AIMC-2018-STEM-909

REDESIGN OF THE ACCESSIBILITY FOR WHEELCHAIR USERS AT MAGUWO RAILWAY STATION WITH ERGONOMIC PERSPECTIVE

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Abstract

Accessibility is still a major problem faced by the disabled people in the public area. Although Indonesia already has a law that protect the disabled, the fact is many public spaces still have not provided particular facilities for disabled people, both physical and non physical to facilitate their activities. Safe and comfortable public facilities for disabled people should be available and sufficient. Evidenced by the increasing number of disabled people in Indonesia from 2.1 million people in 2009 and increased to 3.84 million people in 2012. One of public places that supporting and compatible to redesigned for disabled is railway station. Disabled people found a problem in a place that would become the object of this study is Maguwo Railway Station which is located in Sleman, Special Region of Yogyakarta, Indonesia. The road crossing between platforms and the railway are the part of railway station that will be redesigned in this research using anthropometry, hand tools, and ergonomic participatory. The result is giving a ramp with 820 cm length, 74 cm height of handle, and 4,8 cm for handle diameter over road crossing between platform, and developing the railway with elastomeric rubber. Expected by the existence of the recommendation that helped wheelchair users with public area in railway station.

Keywords: Anthropometry; Disabled People; Ergonomic Participatory; Hand Tools; Railway Station

AIMC-2018-STEM-919

INTEGRATING WATER-ENERGY-NEXUS IN CARBON FOOTPRINT ANALYSIS: THE CASE STUDY OF WATER UTILITY COMPANY

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Abstract

The purpose of this paper is to highlight the water-energy-nexus within the context of carbon footprint methodology and water utility industry. In particular, the carbon management for water utility industry is crucial in reducing carbon emission within the upstream water distribution system. The concept of water-energy nexus alone however can be misleading due to exclusion of indirect and embodied energy involved in the water production. The study highlights the total energy use within water supply system as well as embedded carbon emission through carbon footprint methodology. The case study approach is used as a research method. The carbon footprint analysis includes data collection from water utility company; and data identification of direct and indirect carbon emission from corporation operation. The result indicates that the indirect and embodied energy may not be significant in certain operation area but the energy use may be ambiguous when these elements are excluded. Integrating carbon footprint methodology within the water supply system can improve the understanding on water-energy-nexus when direct and indirect energy use is included in the analysis. This paper aims to benefit academics, government agencies and particularly water utility companies in integrating carbon footprint analysis in water production.

Keywords: Carbon Footprint; Carbon Management; Water-Energy-Nexus Water; Utility Industry

AIMC-2018-STEM-920

THE SUSTAINABLE DEVELOPMENT AND SUSTAINABILITY, IMPACT OF INCREASING RENEWABLE ENERGY PRODUCTION IN THE AREA OF POOR-ELECTRICITY

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Abstract

Electricity and modern energy services are essential components in the provision of basic social services. Lack of access to modern energy services contributes to poverty and limits economic development. Increasing power demand for power plant capacity, in 2011 the installed capacity is 35,596,74 MW, by 2015 its capacity will increase to 55,394,67 MW, the biggest capacity from Steam Power Plant (PLTU) reach 54,03%, then Steam Natural Gas Power Plant (PLTGU) reached 17.96%, other power plants each with a capacity below 10%. Data from Susenas 2014 results, where 52.68 percent of households in Papua Province, and 25.80 percent of households in East Nusa Tenggara Province still use non-electricity sources. This research was conducted to analyze the impact of increasing renewable energy production in the area of poor-electricity, for increasing of the economy, in order to meet the Sustainable Development and Sustainability. The data used is the last 3 years. Sample in the eastern part of Indonesia. Data analysis using model of linear regression.

Keywords: Electricity, Sustainable Development and Sustainability, renewable energy production, poor-electricity, economic development

AIMC-2018-STEM-923

ADSORBED OXYGEN RATE KINETIC EQUILIBRIUM ASSESSMENT ON SYNTHESIZED PADDY HUSK POROUS ACTIVATED CARBON

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Abstract

Compressed 99.5% purity oxygen gas storage (COS) has been stored at 200 – 300 bar hence costly installation and maintenance. Adsorbed oxygen storage (AOS) has been introduced where oxygen is stored at low pressure by high porosity adsorbent as activated carbon (AC). Agricultural waste material products such of paddy husk, palm kernel shell, and coconut shell have been utilized for the low cost activated carbons production. Synthesis activated carbon from the carbonaceous burnt paddy husk involved 2 hrs 700oC carbonization with N2 gas. The char obtained was divided into two samples and each was impregnated with 1M HNO3 and 1M KOH and followed by porous surface activation using microwave method at 400W for 6 minutes under CO2 gas flow. Activation process was to enlarge and form new pore on the chemically treated carbonized char. The AC were tested oxygen capturing rate at 3, 5, 10 and 15 bars for 3 cycles at ambient temperature. The oxygen adsorption capacity was conducted using static volumetric adsorption equipment. The adsorption rates obtained were correlated with adsorption kinetic (Pseudo-first order, Pseudo-second order, Elovich, and Weber Morris). Samples were characterized by TGA, BET, FTIR, VP-SEM and EDX analysis. The model kinetics parameters equations were determined by linear regression method based on the applicability in describing the solid-gas interaction and rate of adsorption. Acid and alkali AC resulted the highest oxygen adsorption capacity of 6.7016 mmol/g and 6.0328 mmol/g respectively at 15 bar the highest pressure. The kinetic results best fitted to the pseudo-second order kinetics with correlation coefficient (R2) between 0.970 to 0.999 for all pressures. The findings revealed that the acid surface has best oxygen adsorption rate as compared to alkali

surface, and the potential prediction of oxygen adsorption onto synthesized porous carbons using the pseudo-second-order kinetics model.

Keywords: Synthesized paddy husk;Activated carbon;Acid and alkali pore surface;Microwave activation;Adsorbed oxygen rate;Adsorption equilibrium kinetics

AIMC-2018-STEM-926

DIGITAL PAMPHLET OF DOMESTIC TOURISM BASED ON AUGMENTED REALITY : THE PROMOTION OF SIDOARJO URBAND TOURISM SITE

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Abstract

Sidoarjo has the potential of historic sights of the world and the center of art heritage in East Java Indonesia. Augmented reality (AR) is being developed as an intelligent tourism promotion to provide information about real destinations and attractions from tourist attractions. Its use will maximize the satisfaction of tourists based on the active use of tourists. Several historic buildings in some areas of eastern Java have been almost recreated. We have taken advantage of the typical ethnic building of the town square to represent the board game. This study presents a new digital pamphlet of domestic tourism based on added facts. Through AR, this historic building generates new life, giving visitors a more engaging and interactive experience that further educates them about the temple itself and about the different historical periods in which the reliefs are carved. Augmented reality, combined with audio commentary in multiple languages, will help visitors to find different reliefs more easily and appreciate the true wonders of this site and the motives behind the historic building carvings.

Keywords: augmented reality, historic, pamphlet, reliefs, Sidoarjo

AIMC-2018-STEM-927

ACIDIC GASES ADSORPTIVE-BREAKTHROUGH TIME ASSESSMENT ON SYNTHESIZED POROUS ADSORBENT DERIVED FROM PALM SOLID WASTE MATERIALS

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Abstract

Adsorption with activated carbon (AC) is considered as the best method in liquid and gas separation. However, the materials like coal and wood which widely used as precursors for the production of commercial sorbents available are very expensive and are still imported. Therefore, an approach of using the cheaper precursor from agro-waste materials for the production of ACs is necessary especially in developing countries. In this study, low-cost activated carbon were produced from palm empty fruit bunch (EFB) and palm kernel shell (PKS) and AC produced was used as adsorbent for the breakthrough adsorption of SO2, CI2 and O2 which carried out using a solid-gas adsorption column. In the first step, the precursor was carbonized at 700 ± 20 oC with 10 0C heating rate for 2 hrs. In the second step, EFB-biochar was impregnated with 2.0 M of Potassium Hydroxide solution using 1:1 weight ratio. PKS-biochar was impregnated with KOH first and then treated with 2 wt. % zinc from Zinc nitrate hexaydrate. The treated biochars were then activated through microwave heating at 400 W power level and 10 min irradiation time. The characteristics of the samples were studied by Thermo-gravimetric analysis (TGA), Fourier transform infrared spectroscopy (FTIR) and Nitrogen adsorption isotherm. The experimental data from the adsorption breakthrough study were applied in Yoon equation to determine the saturation time. EFBAC-KOH produced 17.83, 534.17 and 6.17 s breakthrough time for SO2, CI2 and O2 adsorption respectively. PKAC-KOH-Zn produced 33.67, 1002.5 and 5.33 s breakthrough time for SO2, CI2 and O2 adsorption respectively. The results from breakthrough study revealed that PKAC-KOH-Zn produced better performance in adsorption breakthrough study compared to EFBAC-KOH. The study concluded that AC prepared from palm oil wastes treated with basic agent like KOH can be a potential adsorbent for the acidic gases separation.

Keywords: Agro-waste materials;Activated carbon; Hazardous gas;Adsorption breakthrough time

AIMC-2018-STEM-935

GREEN EGGSHELL/POLYPROPYLENE BIOCOMPOSITE

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Abstract

Polypropylene is a versatile polymer used in various consumer products from automotive to home appliances. Polypropylene is usually synthesized from petrochemical-based raw material which makes their waste hazardous to the environment. Eggshell, on the other hand, is highly abundant biodegradable agricultural waste that contains more than 90% calcium carbonate, a common filler used in polymer. This study investigated the effect of adding eggshell as biofiller in polypropylene matrix on its mechanical and thermal properties. The eggshell was first cleaned, heated, grinded, and sieved to 212 mm particle size. Then, the eggshell powder was mixed with propylene using rheomixer machine at 9:1, 7:3 and 5:5 ratio of polypropylene-to-eggshell. Finally, the composite mixtures were molded using hot press followed by cold press machine. The biocomposite samples were analyzed using Fourier transformed infrared

(FTIR), thermogravimetric analysis (TGA) and tensile test. FTIR and TGA results proved the presence of calcium carbonate from the eggshell in the sample. The optimum mechanical properties obtained was for 7:3 polypropylene-to-eggshell sample with tensile strain (extension) of 0.01658 mm/mm and tensile stress of 12.714 MPa. The findings of this study showed eggshell as a feasible biofiller alternative that gives good mechanical properties complimented with major environmental advantage due to eggshell waste utilization.
Keywords: Polymer Composite, Polypropylene, Eggshell

AIMC-2018-STEM-948

MODELING OF KINETIC ENERGY IMPACT BASE ON DESTRUCTION THEORY FOR COAL FRAGMENTATION

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Abstract

This paper would present the expansion of the comminution theory of brittle material, focus on coal. The modeling applies to both crusher impact model and grinding model. This modeling is an effort to produce an efficient method in order to meet the needs of coal of powder form, as fuel for power generation in the industry. The power demand is expected to increase by 136.20 million tons by 2030; power generation is estimated at 4500 GW by the same year. However, grinding model is currently used to produce coal in powder form due to limitation of impact crusher model. The kinetic energy impact modeling shows a single particle fractures system of coal from 5 to 15 mm in diameter which is crushed onto a semi spherical base to obtain the same impact surface from different angles. The application of physics of collision, linear momentum and fracture mechanic, and fragmentation pattern of coal are determined based on the theory of destruction system. The magnitude of the given kinetic energy impact, the speed and distance of the impact, the mass and the initial size of the coal, the breakage form and the final size of the product are also determined. The size of the crushed coal functioned as the distribution of kinetic energy impact and particle size distribution are assumed in three types of mass based on their size of meshes. While the total of three mass types of particle size distribution is the amount of kinetic energy impact transfer. This theoretical result would be verified in the laboratory and prototype test.
Keywords: Kinetic energy impact model, brittle material, fracture fragmentation mechanism, single particle, particle size, mass distribution.

AIMC-2018-STEM-955

BUILDING AN ARABIC EMAIL CORPUS

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Abstract

There are many large dataset have been assembled in the last years, Arabic language lacks sufficient resources in this field, there is no Arabic email dataset made to be used in spam classification studies, there is an urgent need to fill this gap. To solve this problem, we build an Arabic email corpus, it contains spam and non-spam emails, the total of this corpus is 1066 messages, 512 spams and 554 non-spams. The aim of this corpus is to meet the needs of Arabic Email classification corpora, at the same time to be beneficial to spam applications developers. This will be more useful and able to solve problems and achieve goals.
Keywords: Arabic; corpus; Email; spam; non-spam.

AIMC-2018-STEM-957

VALIDATION OF APHRODITE PRECIPITATION DATA OVER GILGIT-BALTISTAN, PAKISTAN

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Abstract

The reliability of gauge-based gridded precipitation varies with time and regional climate. This emphasizes the need of assessment of the applicability of gridded data to reconstruct the climate at a certain location. In this study, APHRODITE (Asian Precipitation-Highly Resolved Observational Data Integration Towards Evaluation) is validated with four observed station data of Gilgit-Baltistan located in northern regions of Pakistan. Statistical approaches such as RMSE, Bias, R2, coefficient of determination and Nash-Sutcliffe Efficiency were used to validate the gauge-based data. The results of the study revealed that the APHRODITE shows very good association and less error with the observed station data. The less errors and high association showed the high capability of APHRODITE over Gilgit-Baltistan. Therefore, it can be expected that, APHRODITE datasets can be useful for reliable assessment for various applications over Gilgit-Baltistan.
Keywords: Rainfall, Gauge-based data validation, APHRODITE, Gilgit-Baltistan, Pakistan

AIMC-2018-STEM-958

FILTER OPTIMIZING AND MAINTAINING MULTI-RATE PROCESSING USING AN OPTIMIZED UNIVERSAL FILTERED MULTI-CARRIER WITH CASCADED INTEGRATOR-COMB FILTER

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Abstract

Mobile telecommunication plays an important role in transmitting information such as data, images, videos and voice between places. For this purpose, a telecommunication process was introduced with different network generations. Among these various generations, the 5G-based information transmission process improves the overall communication process because it overcomes spectral efficiency issues by utilizing effective modulation techniques. This paper examines the optimized Universal Filtered Multi-Carrier (OUFMC) based modulation technique for improving the communication process. Along with the OUFMC technique, a cascaded integrator–comb (CIC) filter was utilized for maintaining multi-rate processing and computational efficiency. This optimized technique effectively reduces the signal over out-of-band leakage ratio and the distortion over out-of-band leakage ratio. Finally, this paper presents the excellence of the system as evaluated through experimental results.

Keywords: 5G; modulation techniques; optimized Universal Filtered Multi-Carrier (OUFMC); cascaded integrator–comb (CIC) filter; multi-rate processing; computational efficiency.

AIMC-2018-STEM-962

KID'S EDUCATION AND FUN COURSEWARE

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Abstract

Kids Education and Fun courseware is a project developed to assist kids and preschool teacher in the phonetic language. Besides, it intended to be an additional tool to kids and preschool teacher use in classroom to expert and interested in phonetic language in more depth. Courseware is development is based on the project objectives that to design requirement of KidsEduFun, to design and develop the KidsEduFun as additional tool in learning and to test and evaluate KidsEduFun of usability testing to solve the problem statement in the project. KidsEduFun is comprises of three stages which are alphabet, phonetic and game. In the first stage, there are related to alphabet, the first step should been taken by kids is to know the alphabet. The user can get the information by clicking the button on the display screen. In the second stage, phonetic is the stage where the user can learn the alphabet sound in phonetic language. In the last stage, the user can try to answer the questions via the game provided to test their understanding. The methodologies that will be used in develop this learning program are ADDIE model. Lastly, KidsEduFun is developed to be used as additional tool to kids and preschool teacher in knowing the phonetic language. Besides that, it is able to attract students to study alphabet and phonetic language with the multimedia elements and essential for education now.

Keywords: kid's education;fun;courseware

AIMC-2018-STEM-964

MULTI AZIMUTH SEISMIC REFRACTION SURVEY TO STUDY THE SEISMIC SLOWNESS RESPONSES TOWARD FRACTURES ORIENTATION IN LIMESTONE.

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Abstract

Geological fracture has essential effect on reducing seismic velocity. This paper highlights the velocity variation in different direction with respect to preferred orientation of fracture sets of limestone in a quarry located at Chemor, Perak, Malaysia. Multi azimuth seismic survey in the orientation of fan shooting is utilized to records seismic velocity from different azimuth. Slowness concept is used to study the responses of seismic wave in regards to the discontinuity orientation. The analysis of the results indicate seismic wave propagates faster in the direction parallel with the strike of the fracture. The seismic wave experience largest time delay as the wave propagates perpendicular with the strike direction of the fracture structure.

Keywords: Geological fracture; Seismic velocity; Slowness; Strike.

AIMC-2018-STEM-967

RAPID MOBILE COMMUNICATION; OFDM NETWORKS

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Abstract

Rapidly and Emerging trends in mobile communication and ever-growing demand of mobile users created the need for new technologies that could satisfy this need under limited bandwidth. There are several techniques like using higher order modulation like (PSK and QAM), orthogonal division multiple access (OFDM), the use of convolutional coding, and the use of the 60 GHz band. This band serves wider area applications because of the tiny beams of the transmission

antenna to transmit this millimetre radio signal. Because of its short range transmission, it connects devices with up to 7 Gbit/s. From the results obtained from the simulation; this speed is 10 times faster than the transmission in WIFI 802.11n. This thesis proposes a duplex 60-GHz Ultra-WideBand (UWB) System to extend the coverage for UWB communication systems. The simulation is separated into two main parts to simulate the response of the OFDM-UWB system. the first section discusses the effects of using higher order modulation with the 60GHz band transmission. The simulation results show that the use of QPSK modulation obtains a good BER performance, but it's suitable to use 16QAM modulation to get high data rate transmission. The second section discusses the performance of OFDM-UWB system with the use of convolutional coding. The results show that for the former K, the larger K, the lower BER, while the more complexity for decoding; for the latter R, the larger R, the more throughput, while with more Eb/No penalty. The simulation processes are simulated using MATLAB environment.

Keywords: OFDM; OFDM-UWB; 60 GHz

AIMC-2018-STEM-968

DIGITAL COMIC FOR EDUCATIONAL VISUALIZATION MALACCA HISTORY

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Abstract

The use of multimedia technology and tools in teaching and enhancing student’s visualization learning seeming as one of the most effectives ways to improve and change their current technique of learning. Different people have different learning styles. In many years, learning in educational courseware has developed as many as application that’s teach students to achieve their better understanding in educations. As an example, learning history in secondary school syllabus have been identified as a boring and difficult subject for students. Therefore, this project has researched a suitable methods and techniques to develop an application based on multimedia learning through digital comics visualization. This Digital Comic application is about the History of Malacca, which is focus on “Kedatangan Parameswara” into Malacca city.

Keywords: Digital Comic, History of Malacca, “Kedatangan Parameswara”

AIMC-2018-STEM-974

GEOLOGICAL AND ELECTRICAL RESISTIVITY STUDIES OF MUKAH COALFIELD AREA, SARAWAK, MALAYSIA

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Abstract

Tertiary coal seams in Mukah Coalfield appear to be discontinuous laterally in terms of depth and thickness of the seams. This may be attributed from the tectonic events that occurred in the past which had also resulted in the formation of Teres-Bakau anticline and Badengan syncline found in this area. Numerous localized faults with significant displacement commonly occur in the Mukah Coalfield which increases the tectonic complexity of the area. This complexity poses a challenge in estimating the volume of coal that can be economically extracted. The Geo-electrical Resistivity survey was conducted to delineate the coal seams in the Mukah Coalfield area in order to determine the continuity of the coal seams. It is found that the extension of the coal is found with the values of 80 – 200 Ohm.m at the elevation of 20 m until - 5 m and is dipping towards South.

Keywords: Tertiary Coal; Mukah Coalfield; Geo-electrical Resistivity

AIMC-2018-STEM-976

DEDUCING THE BASEMENT ROCK OF PEKAN USING ELECTRICAL CONDUCTIVITY

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Abstract

Pekan, Pahang is generally covered with unconsolidated Quaternary alluvium as it makes up the Pahang Delta. Well studies have shown that the underlying metasediments and volcanic basement of Pekan are shallow, with increasing depth towards the shoreline. However, the structure of the basement is still unknown due to the poorly distributed wells throughout the Pekan district. Thus, the Transient electromagnetic (TEM) survey was conducted to provide a better data coverage by measuring the basement rock electrical conductivity. Based on the conductivity values obtained, the structure of the basement rock of Pekan is deduced as well as its depth.

Keywords: Transient Electromagnetic; Pekan;

AIMC-2018-STEM-978

GRAVITY MODELLING OF PEKAN, PAHANG RIVER DELTA AND CRYSTALLINE BASEMENT

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Abstract

Quaternary Pekan river delta sediments have been proven to be overlying granitic basement through studies from boreholes and seismic. However, gravity exploration in this area showed two distinct gravity highs in the northern and southern part of Pekan. The density contrasts between the Quaternary alluvium and granite basement are low in this region which implies that an intrusion of a higher density mafic structure is present. Thus, a useful method derived along the profile A-A’ in the Bouguer gravity anomaly map to create a gravity model was done to detect the distribution, shape and geometry of the granite basement and pinpointing the accurate location of the higher density material underneath.

Keywords: Gravity crustal model; Pekan;

AIMC-2018-STEM-979

STRUCTURES AND BASIN SETTING OF SEMANGGOL FORMATION, BUKIT MERAH USING GRAVITY DATA

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Abstract

Geophysical investigations have been widely used in studying geology and subsurface structures. A study on the application of gravity survey covering the Semanggol area has been acquired and analysed. The aim of this survey is to study the basin setting and subsurface structures such as fractures and faults. The survey is conducted by using the Scintrex model CG-5 gravimeter. There are total of 171 gravity stations established during the survey with a 500 m to 1 km spacing. In order to generate a corrected gravity data, the raw data were corrected for drift, latitude, free-air, terrain and Bouguer corrections. The corrected data were processed and analysed to produce Bouguer, regional and residual gravity anomaly maps for qualitative and quantitative interpretations. Techniques of regional-residual separation was applied to study the deep-seated and shallow-seated geologic features. The Bouguer and regional gravity values decreased towards the eastern part in the map, indicating the thickening of basement depth. The rose diagram for residual gravity and DEM maps reveal that the dominant orientation for gravity lineaments is in NE-SW direction. Also, the 2-D modelling was established by the A-A’ profile from Bouguer gravity map to study the basin setting.

AIMC-2018-STEM-981

ROCK SLOPE STABILITY ASSESSMENT OF GUNUNG RAPAT LIMESTONE HILLS, KINTA VALLEY, PERAK, MALAYSIA

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Abstract

Abstract. Limestone hills are prone to chemical weathering such as dissolution which causes the formation of karst terrains. They also exhibit extensive geological discontinuities due to past tectonic history and also physical weathering. Therefore, limestone hills can pose danger to properties and human due to instability of the slopes. Physical weathering causes the rocks to undergo stress which opens existing geological discontinuities such as fractures. These geological discontinuities are the main factor which causes slope instability and rock fall. The main objective of this study is to investigate the failure modes of six slopes in the limestone hills of Gunung Rapat, Ipoh, Perak, Malaysia. Based on the kinematic analysis conducted, plane failures were identified on slope M1, M2 and T3. Wedge failures were identified on slopes M2, T2 and T3. However, no failure was identified on slopes M3 and T1. Slopes M1, M2, T2 and T3 all have high susceptibility to failure due to the intensity of discontinuities and unfavourable joint orientations.

Keywords: Slope stability; Rockfall; Modes of failure; Kinematic analysis

AIMC-2018-STEM-982

PHYSICO-CHEMICAL AND GEOMECHANICAL PROPERTIES OF SUNGAI PERLIS BEDS BLACK SHALE AT KIJAL, TERENGGANU

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Abstract

Hydrocarbon production from unconventional shale gas reservoir has become one of the major energy sources worldwide. Great comprehension of the geomechanical properties of shale is really important on the stage of shale gas extraction especially for hydraulic fracturing and wellbore stability. This paper is about the study on phys?co-chem?cal and geomechanical properties of black shale from Sungai Perlis Beds in southern Terengganu. Total Organic Carbon (TOC) analyses were ran to measure the organic content, while X-ray diffraction (XRD), X-ray Fluorescence (XRF) and Field Emission Scanning Electron Microscope (FESEM) with Energy Dispersive X-ray (EDX) analyses were conducted to measure the mineral composition and microstructure of the shale. Brittleness index was derived from mineralogical analysis. The geomechanical parameters were obtained from various rock strength tests; uniaxial compressional strength test, triaxial test, indirect brazilian test. Poisson’s ratio of the shale was analyzed using non-destructive P & S wave ultrasonic test. The silica content ranges from 34 to 46.2 percent. Stable clay mineral, illite is the dominant clay mineral with presence of phengite and minor kaolinite. The shales studied show brittle properties which clearly can be observed from the stress-strain curve and form of failure. High friction angle with low cohesion

characterise the samples except for Batu Pelanduk (BP) sample. Sample tested show low elastic modulus ranges from 0.1 to 0.3 GPa and Poisson’s ratio ranges from 0.21 to 0.34. ?ndirect tensile strength ranges from 0.99 to 2.54 MPa. Lowest UCS resulted from PK, 0.68 MPa and highest from BP, 2.92 MPa.
Keywords: unconventional shale gas; physio-chemical; geomechanical; illite; brittle

AIMC-2018-STEM-987

A STUDY OF GAS DETECTION SYSTEM PLACEMENT THROUGH ASSESSMENT OF LAYOUT AND PLANT SITING

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Abstract

Fire and gas detection systems also known as FGS systems play an important role in offshore facilities. The main purpose of FGS is to detect the flammable gas release as fast as possible and reducing the risks of explosions which lead to catastrophic accidents. Gas detectors should be placed in an effective location which gives the shorter time to detect the accidental released gas. Geometry from Yetagun offshore from Myanmar from PETRONAS Carigali Ltd was taken and gas dispersion was simulated using with suitable software. There are various number of software available in order to detect the gas dispersion as well as the placement of the gas detection systems. PHAST, Detect3D and FLACS are the most common and the most suitable for the placement of the gas detectors. In this project, FLACS (Flame Acceleration Simulator) software (CFD) was assimilated and used. In order to simulate gas dispersions, wind speeds, leak directions, leak rates and leak directions were considered. Monitor points or gas detectors or gas sensors were chosen, filtered and prioritize according to the gas dispersion simulations made. Finally, coordinates of finalized 4 gas detectors were obtained to install in the geometry. Mean average time taken to detect the gas release was also calculated based on the chosen gas detector locations as well. However, there should be studies from the HAZOP or QRA (Quantitative Risk Assessment) of the area or geometry in order to determine the effective leak rate and leak scenarios to simulate in the FLACS software. Competent engineers and safety engineers are responsible to determine the effective placement of the gas detectors as well.

Keywords: Gas Detection Systems; detect accidental releaased gas; FLACS software (CFD; gas detection time; wind speeds; leak directions; leak rates and leak directions.

FUTURE CONFERENCES

4th ASIA International Conference 2018 (AIC-2018)

Venue: *Universiti Teknologi Malaysia, Kuala Lampur, Malaysia*

Tentative Date: *15-16 December 2018*

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FUTURE WORKSHOPS

Certification on Statistics and Data Analysis (Weekly Programme)

Date: *23 June 2018 (8weeks)*

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Workshop on Systematic Literature Review and Meta-Analysis

Date: *20 May 2018*

Venue: *Innovation and Commercialisation Centre, Industry Centre, Technovation Park, Universiti Teknologi Malaysia, 81300 Johor Bahru, Johor, Malaysia.*

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Workshop on Structural Equation Modeling (SEM) Using AMOS

Date: *15-16 June 2018*

Venue: *UTM, Kuala Lumpur, Malaysia*

Workshop on Structural Equation Modeling (SEM) Using AMOS

Date: *15 July 2018*

Venue: *Innovation and Commercialisation Centre, Industry Centre, Technovation Park, Universiti Teknologi Malaysia, 81300 Johor Bahru, Johor, Malaysia.*

Workshop on Structural Equation Modeling (SEM) Using Smart PLS

Date: *19 August 2018*

Venue: *Innovation and Commercialisation Centre, Industry Centre, Technovation Park, Universiti Teknologi Malaysia, 81300 Johor Bahru, Johor, Malaysia.*

Workshop on Qualitative Data Analysis using NVIVO

Date: *16 September 2018*

Venue: *Innovation and Commercialisation Centre, Industry Centre, Technovation Park, Universiti Teknologi Malaysia, 81300 Johor Bahru, Johor, Malaysia.*

Advances in Structural Equation Modelling

Date: *20 January 2019*

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